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WEATHER BUREAU

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 1, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			29.96	760.9	69.8	21	82	NE			1		3			0	0	Pretty fair	
Nemours			30.04	763.0	81.0	27.2	80	ENE			5		5			0	0	Cloudy	Kesxuche.
Algiers			30.00	761.9	84.2	29.0	69	ENE			5		2			Inap	Inap.	Fair	Tourilliere.
La Calle			30.07	763 7	84.2	29.0	84	NNW			5		3			0	0	Pretty fair.	Foufrede.
Tunis			29.83	757.7	95.0	35.0	47	E			2		0			0	0	Clear	Jacques.
Sfax			30.09	762.2	89.6	32.0		E			1		0			0	0	Clear	Gau.
Saida			30.03	762.8	94.1	34.5	22	N			3		1			0	0	Very fair	Herbin.
Tebessa			30.03	762.7	90.5	32.5	19	NW			3		1			0	0	Very fair	Watrin.
Geriville			30.07	763.6	90.3	32.4	32	SE			6		6			0	0	Cloudy	Brugniaux.
Laghouat			30.13	765.2	95.0	35.0	21	ESE			1		0			0	0	Clear	Bertrand.
Biskra			30.02	762.5	102.2	39.0	25	E			1		1			0	0	Very fair	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.48	748.7	30.00	762.0	76.6	24.8	53	E			2		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.27	743.5	30.02	762.4	72.0	22.2	64	W			2		2			0.303	7.7		Dr. Wierzbiski
Eperies	29.13	739.9	29.97	761.3	73.8	23.2	70	Calm			0		5cs;s		S	0.988	25.10		Julius Mikolik.
Gratz	28.92	734.6	30.14	765.5	69.6	20.9	69	Calm			0		7			0.087	2.20		Andreas Rospini.
Hermannstadt	28.53	724.6	29.92	760.0	85.8	29.9	51	W			1		1			0	0		Prof. A. Gottschling.
Kremtmünster	28.74	730.0	30.05	763.2	66.9	19.4	72	E			1		10			0.177	4.5		Prof. C. Wagner
Lemberg	29.01	736.9	29.97	761.1	68.7	20.4	76	SW			3		7			0.012	0.3		Dr. T. Stanecki.
Pola	29.82	757.4	29.93	760.1	84.7	29.3	50	ESE			2		9cs			0	0		I.R.Hydrographic Office.
Szathmar	29.54	750.3	29.98	761.5	81.0	27.2	67	NW			2		2			0.012	0.3		Julius Csics, S. J.
Szegedin	29.69	754.2	29.96	760.9	80.2	26.8	57	Calm			0		5			0	0		Karl Stancel.
Trieste	29.85	758.3	29.96	760.9	82.8	28.2	44	ENE			2		1			0	0		P. Busin.
Vienna	29.35	745.4	30.04	763.0	71.4	21.9	66	WNW			1		8			0.181	4.6		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.92	760.0	30.02	762.5	58.4	14.7		NW	14	6.3			9			0.020	0.51	Overcast	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			30.14	765.5	58.8	14.9		WNW	6	2.7									S. Call.
Bidston, (Liverpool Obs.)			30.08	764.0	58.0	14.4		W	25	11.2			9					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire																0.25	6.3		J. McLandsborough.
Bridgetown, (Barbados)	29.94	760.5	29.97	761.2	76.0	24.4		SE			3		9					Raining	Pvt. G. W. Roberts, A. H.C.
Cambridge, Observatory			30.04	763.0	61.0	16.1		NW			1		10					Overcast	H. Todd.
Cardington			30.08	764.0	61.0	16.1		NW			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.88	758.9	30.01	762.2	60.7	15.9		NW			3		9					Overcast	Lt. Cl.C.N. Martin, R. E.
Dartmoor	28.65	727.7	30.11	764.8	58.0	14.4		NW			5		2					Fine	Alexander Watt.
Donaghadee	30.07	763.8	30.10	764.5	62	16.7		NNW			3		5					D. clouds	J. Mac Gowan.
Dover	30.03	762.7	30.06	763.5	63	17.2		WNW			3		7					Gloomy	J. Costello.
Eccles, (near Manchester)			29.75	755.6	59.4	15.2		ESE	4.4	2.0			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.98	761.5	30.21	767.3	61.7	16.5		NNW			2		9					D. clouds	The Staff.
Fort Napier, (Natal)	27.30	693.4	29.61	752.1	88.0	31.1		NW			6		8					D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.78	756.4	30.01	762.2	84	28.9		SW			2		4					D. clouds	
Galway, Queen's College			30.12	765.0	62	16.7		W			3		6					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.97	761.2	30.02	762.5				NE			5		5					Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.83	757.7	30.03	762.7	64.9	18.3		WSW			5		9					Gloomy	D. G. Maclean.
Great Yarmouth	29.95	760.7	29.96	761.0	58	14.4		NW			4		8					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.89	759.2	30.06	763.5	59.9	15.5		WNW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.94	760.5	30.16	765.8	63.5	17.5		WNW			3		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.18	766.6	65	18.3		NW			2		4ck			0	0	Fine	M. P. Moyle.
Holyhead	30.08	764.0	20.13	765.3	60	15.6		NW			3		10					Overcast	John Tilston.
Jersey	29.90	759.4	30.19	766.8	63.7	17.6		WNW			4		3					D. clouds	J. Fisher.
Kew, Observatory	30.04	763.0	30.08	764.0	61.1	16.2		WNW	10	4.5			10					Misty	The Staff.
Kingstown	30.11	764.8	30.14	765.5	60	15.6		NW			4		9					Overcast	George Mitchell.
Leicester, Museum			30.05	763.3	58.7	14.8		NW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.95	760.7	84.0	28.9		NE			1		0					Blue sky	Sergt. Beckett.
Nairn	29.92	760.0	29.99	761.7	58	14.4		E			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	84.8	29.3		SE			1		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.85	758.2	30.04	763.0	61.5	16.4		WNW			3		10k;d		W	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.55	750.6	30.07	763.8	58.2	14.6		NW			4		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.08	764.0	60	15.6		NW			2		10					Overcast	H.E. Bellamy.
Plymouth	30.08	764.0	30.16	766.1	65.5	18.6		NW			3		5					D. clouds	John Merrifield.
Roche's Point	30.18	766.6	30.22	767.6	64	17.8		SW			3		5					½ clouded	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.)			30.04	763.0	54.5	12.5		NNW	12	5.4			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.95	760.7	92.7	33.7		NE			2		2					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.77	756.1	30.05	763.3	62.8	17.1		NW			4		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	72.3	22.4	67	Calm			0		1			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.66	753.4	30.06	763.5	60.2	15.7		W			3		7					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.88	758.9	30.10	764.5	61.2	16.2		NW			1		10					Overcast	Rev. C.H. Griffith, F.M.S
Thurso			30.03	762.7	55	12.8		N			2		9					Overcast	John Trotter.
Truro, Royal Institution			30.21	767.3	66	18.9		NW			7		8					Gloomy	W. Newcombe.
Valencia, Observatory			30.20	767.1	62.4	16.9		SW	7	3.1			5					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.82	757.4	60.0	15.6	76	SW			3		6k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.89	759.2	30.08	764.0	74.1	23.4	64	NE	8.0	3.6		0	6		NE-WSw	0	0	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	30.02	762.5	30.11	764.8	53.0	11.7	75	SW	6	2.7			6			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

MARINE SERIES. VESSELS.	Inches	Millimeters	Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind from—	Miles per hour	Meters per second	Force	Up'er	Low'r	Upper from—	Lower from—	Sea or swell: Height scale 0–9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson,
Brig Catherine, N. 41° 30', W. 65° 30'			30.23	767.8	70	21.1		SSE			2		1			1		Blue sky	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 45° 20', W. 14° 30'			30.28	769.1	68	20.0		NNE			4		5			2	NNW	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N.
Schooner Traveller																			Capt. Alex. Simpson. [R.
Barque Virginia																			Capt. W. Spratly.

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount.		Clouds. Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeter	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
Punta Arenas																			
San José	26.25	666.7			65.3	18.5	90	SE			1	8cs				0	0		Mr. Ansart. Federico Maison

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

DANISH SERIES.

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

Copenhagen	29.69	754.1	29.74	755.3	66.0	18.9	75	SW			2		10						
Fanöe	29.72	754.9	29.74	755.4	66.7	19.3	79	W			4		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	30.02	762.4	30.05	763.3	53.4	11.9	72	Calm			0		10						
Vestervig	29.57	751.0	29.74	755.3	63.0	17.2	94	N			2		6						

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

FRENCH SERIES.

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

Alençon, Normal School	29.61	752.0	30.16	766.0	66.2	19	84	Calm			0		5		SE	0.04	1.	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	30.02	762.6	30.10	764.6	77.0	25	40	N			4		10			0	0	Covered	M. Girand, Director.
Bar-sur-Seine																0.016	0.4		C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.83	757.6	30.11	764.7	66.6	19.2	63	NNW			2		8		W	0.089	2.25	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.18	741.2	30.18	766.5	66.2	19	80	WSW			4		5		SW	0	0	Cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.67	753.6	30.20	767 1	72.5	22.5	79	SW			2		2clk		SW	0	0	Slightly cov	A. Wagner, Director.
Brest, Naval Observatory	29.93	760.1	30.17	766.2	67.6	19.8	77	W			1		10		W	0.009	1.75	Misty	The Staff.
Carcassonne, Normal School	29.79	756.6	30.19	766.7	74.1	23.4	48	NW			1		5	W	W	0	0	Cloudy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.53	750.1	30.07	763.8	78.1	25.6	80	N			2		3	S	S	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.74	755.4	30.05	763.3	65.8	18.8	72	SW			1		5	SW	SW	0.244	6.2	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.84	732.6	30.17	766.3	66.9	19.4	61	W			1		5		W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.26	743.1	30.12	765.1	63.5	17.5	76	W			3		5kn		W	0.248	6.3	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	29.00	736.6	30.14	765.6	73.8	23.2	32	NW			3		5	W		0	0	½ cloudy	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	29.98	761.4	30.15	765.7	65.5	18.6	84	W			1		5		W	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.85	758.3	30.16	766.0	65.8	18.8	72	W			3		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.30	744.2	30.20	767.0	67.3	19.6	79	SW			1		5		SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.21	767.3	30.24	768.2	66.6	19.2	88	W			1		2	W		0	0	Partly cl'dy	M. Galzin, Director
Mirecourt, Normal School	29.04	737.7	30.07	763.7	64.0	17.8	80	SW			1		10k		W			Raining	M. Barbier, Director.
Nismes, Normal School	29.91	759.7	30.12	765.1	80.6	27	66	N			4	2c		N		0	0		Boyer, Director.
Privas, Normal School	29.11	739.6	30.15	765.9	71.6	22	50	NW			1		k	NNW	NW	0	0		M. Cantier.
Puy de Dome (Summit)	25.35	643.9			44.6	7.0	100	NW			1					0.083	2.1	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.21	767.3	30.24	768.1	74.3	23.5	67	W			2		8	W	W	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.04	762.0	30.12	765.1	64.6	18.1	67	W			1		10		W	0.197	5.0	Covered	F. Lucard, Director.
Saint Malo (Port)			30.19	766.7	64.2	17.9	63	NW			2		1		NW	0.211	5.36	Clear	M. H. Hercouet.
Tarbes, Normal School	29.09	738.0	30.16	766.0	64.4	18	80	SW			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.89	759.2	29.92	759.9	81.3	27.4										3.54	90.		L'Abbé Marchés.
Lyons			30.11	764.7	70.2	21.2	75						4			0	0		L. Jays.
Marseilles, Observatory			30.07	763.6	76.8	24.9	34	WNW			4		5			0	0	Cloudy	The Staff.
Mont-Louis	24.97	634.2	30.28	769.2	69.1	20.6	44	SSW			1		1		SW	0	0		M. Cave.
Nice			30.01	762.3	77.0	25.0	80	SW			1		3			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.82	757.4	30.10	764.4	64.4	18.0	88	W			2		8		W	0.063	1.6		Marié Davy, Director
Perpignan			30.19	766.8	75.6	23.9	47	N	14.9	6.66			7		W	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.73	577.3			49.1	9.5		SW			1		6			0	0	Fair	Gen'l de Nansou y
Saint Maur, (near Paris)	29.95	760.6	30.11	764.8	62.6	17.0	86	W			1		9		WSW	0.138	3.5	Light rain	E. Renou.
Toulouse, Observatory	29.55	750.6	30.28	769.1	69.6	20.9	45	NNW			3		5			0	0		The Staff.
Tours	29.97	761.1	30.16	766.1	68.7	20.4	68	W			3		8		W	0.016	0.4		C. Marquet.
Versailles			30.11	764.8	69.8	21.0	51	WNW			2		9			0.011	0.28	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.74	755.3	29.76	755.9	76.3	24.6	99	NNE	1.6	0.7			0			Inap.	Inap.	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.17	740.8	29.99	761.7	70.7	21.5	75	WNW			3		4	W		0.39	10.		Prof. Dr. Hoh.
Berlin	29.75	755.7	29.92	759.9	69.1	20.6	60	S			4		9			0	0		Prof. Arndt.
Breslau	29.48	748.7	30.01	762.2	73.6	23.1	63	WSW			3		5			0	0		Royal University Obs'y
Carlsruhe	29.65	753.0	30.07	763.6	63.7	17.6	87	W			1		8			0.311	7.9		Albert Senz.
Cassel	29.35	745.5	29.96	760.9	69.4	20.8	55	WNW			6		8	SW		0.165	4.18		Dr. H. Möhl.
Crefeld	29.76	755.9	29.92	760.0	67.6	19.8	75	SW			5		8			0.08	2.		Director Lose.
Emden	29.67	753.7	29.71	754.6	64.6	18.1	85	SSW			6		8			0	0		Prof. Prestel.
Frankfort on the Main	29.67	753.5	30.02	762.5	69.1	20.6		WSW			4		9			0.035	0.9		Physical Society.
Friedrichshafen	28.69	728.6	30.09	764.3	65.1	18.4	66	SW			4		6	WSW		0.051	1.3		M. Wilhelm.
Hamburg	29.75	755.6	29.82	757.3	68 5	20.3	68	SW			5		7k			0.551	14.0	Squally	Captain F. Hegemann.
Kiel	29.77	756.1	29.78	756.5	67.1	19.5	70	W			3		5			0.163	4.16		Prof. G. Karsten.
Königsberg, (Prussia)	29.78	756.5	29.86	758.5	70.3	21.3	59	SW			4		2			0.177	4.5		Prof. E. Luther.
Köslin			29.82	757.3	66.2	19.0		SW			4		4			0.165	4.2		H. Müller.
Leipsic, Observatory	29.57	751.0	29.98	761.4	70.2	21.2	53	WSW			6		8			0	0		Prof. Bruhns.
Memel, Naval School	29.82	757.3	29.86	758.5	67.3	19.6	70	SW			2		5c;cs;s	SW					Reinbrecht and Skalweit.
Neufahrwasser	29.85	758.1	29.86	758.5	68.4	20.2	71	SW			3		9			0.134	3.4	Raining	A. Lothes.
Posen	29.69	754.0	29.97	761.1	72.3	22.4	50	W			6		9			0	0		Dr. Magener.
Strassburg (in Alsace)	29.57	751.1	30.11	764.7	69.3	20.7	58	W			3		8	W		0.049	1.25		Astronomical Observatory.
Stuttgart	29.14	740.2	30.06	763.4	70.3	21.3	47	SW			2		6	W		0	0		Prof. Schoder.
Treves, (Trier)	29.50	749.4	30.03	762.7	65.8	18.8	70	W			5		10			0.030	0.75		Prof. Flesch.
Weissenburg, (Bavaria)	28.58	725.8	30.04	762.9	66.2	19.0	57	W	3.8	1.7			7ck		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.78	756.5	29.82	757.5	65.5	18.6	82	SW			4		10			0.256	6.5		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.58	751.4	29.95	760.6	97.7	36.5		NE			6.0							Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.65	753.2	29.70	754.4	87.8	31.0	70	WSW	29.?	13.0?		2				0	0	D. clouds	
Deesa	29.30	744.2	29.78	756.4	78.4	25.8	93	SE				10				1.64	41.7	Thunder storm	
Bombay	29.65	753.2	29.69	754.1	85.5	29.7	82	WNW	9	4.0		10		SW		0.03	0.8	Overcast	
Poona	27.70	703.6	29.67	753.6	83.9	28.8	72	NW				10		NW		0	0	Overcast	
Lahore	28.93	734.9	29.65	753.2	94.1	34.5	54	Calm	0.8	0.4		0				0	0	Blue sky	
Belgaum	27.20	690.8	29.70	754.5	80.0	26.7	83	SSE	5	2.2		9		SSE;W		0.20	5.1	Thunder-storm	
Roorkee	28.78	730.9	29.66	753.3	86.8	30.4	74	Calm	2	0.9		6				0	0		
Agra	29.07	738.4	29.63	752.5	85.7	29.8	76	E				5		W		0	0		
Nagpur	28.69	728.7	29.72	754.9	86.1	30.1	68	Calm	3.9	1.7		7		NE		0	0	D. clouds	
Lucknow																			
Allahabad	29.38	746.3	29.69	754.1	81.6	27.6	93	Calm	1.1	0.5		9	W			0.43	10.9	D. clouds	
Patna	29.53	749.9	29.71	754.5	85.6	29.8	83	Calm	1.7	0.8		6	E	E		0	0	D. clouds	
Hazaribagh	27.75	704.9	29.76	755.9	77.3	25.2	87	WSW	6	2.7		10				0.54	13.7	Thunder-storm	
Cuttack	29.74	755.4	29.82	757.5	86.9	30.5	70	S	2.2	1.0		3				0	0	D. clouds	
Calcutta (Alipore)	29.75	755.5	29.77	756.1	84.2	29.0	82	SSW	7.0	3.1		3	SW			0	0	D. clouds	
Goalpara	29.33	744.9	29.72	754.8	81.4	27.4	89	Calm	0.6	0.3		6				0.17	4.3	D. clouds	
Chittagong	29.72	754.9	29.81	757.3	82.7	28.2	91	SE	3.1	1.4		4				0	0	Misty	
Sibsagar	29.42	747.2	29.76	755.8	79.2	26.2	92	SW	1.7	0.8		10	W	W		1.23	31.2	Overcast	
Jubbulpore	28.36	720.3	29.72	754.9	78.8	26.0	88	SE	4.3	1.9		10				0.63	16.0	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.60	751.9	30.00	761.9	77.4	25.2	52	NE	7.4	3.3	.....	.....	5	.....	.....	0.063	1.6	.....	Prof. Giovanni Clodig.
Padua	29.83	757.7	29.94	760.4	83.1	28.4	56	NNE	1.8	0.8	.....	.....	8	SE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.76	755.8	29.94	760.5	81.3	27.4	61	NW	1.8	0.8	.....	.....	5	W	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	29.82	757.3	29.93	760.2	79.9	26.6	56	S	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.45	747.9	29.94	760.5	82.0	27.8	55	ENE	.....	.....	2	.....	7	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.08	738.6	29.95	760.8	79.2	26.2	44	SSE	4.3	1.9	.....	.....	5	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.10	713.7	29.95	760.7	76.1	24.5	51	W	.....	.....	4	.....	8	SE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.77	756.2	29.98	761.6	79.3	26.3	67	SW	.....	.....	2	.....	6	SW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.82	757.5	29.99	761.7	78.6	25.9	66	SE	.....	.....	4	.....	4	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.63	752.6	29.93	760.3	86.7	30.4	31	SW	.....	.....	8	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.72	754.9	29.97	761.2	88.2	31.2	37	W	.....	.....	2	.....	2	SW	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.93	760.2	30.01	762.2	79.5	26.4	62	W	8.1	3.6	.....	.....	1	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.90	759.5	29.95	760.7	82.8	28.2	62	NE	.....	.....	.....	.....	6	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.47	723.2	29.98	761.5	87.1	30.6	36	SW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.83	757.7	30.00	762.0	90.9	32.7	24	S	13.0	5.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.82	757.3	30.01	762.2	91.6	33.1	27	W	.....	.....	4	.....	1	S	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.71	754.6	29.95	760.8	100.4	38.0	21	W	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.77	756.1	29.95	760.8	87.4	30.8	61	SE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.12	739.7	30.01	762.3	97.2	36.2	33	SW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.79	756.6	30.04	762.9	83.1	28.4	60	E	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.92	759.9	29.99	761.8	90.3	32.4	25	SSE	2.5	1.1	.....	.....	1	W	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.50	749.4	30.06	763.5	91.2	32.9	52	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.60	751.8	29.79	756.6	79.5	26.4	88	NNW	3.1	1.39	.....	.....	8ks;s	.....	E	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.88	758.9	29.95	760.7	67.6	19.8	85	ENE	4.4	2.0	.....	.....	3ck;ks;s	.....	.....	0	0	Fair	
Tokei (Yeddo) University	29.85	758.2	29.95	760.6	68.0	20.0	92	E	5	2.2	.....	.....	7ks	.....	.....	0	0	Fair	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Cuernavaca	.....	.....	.....	.....	63.4	17.4	75	NW	.....	.....	1	7ck	3s	E	.....	0.441	11.2	Very cloudy	P. Ceballos.
Guadalajara	25.14	687.3	30.05	763.2	58.6	14.8	90	Calm	.....	.....	0	0	8ks	.....	E	0.803	20.4	Misty	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.098	2.5	.....	F. Ortiz.
Leon	24.45	621.4	30.01	762.1	63.0	17.2	92	NW	.....	.....	1	8c	2s	E	Calm	0.045	1.16	Misty	Prof. M. Leal.
Mexico	23.15	588.1	30.14	765.6	57.9	14.4	91	Calm	0	0	.....	5c	3ks	.....	.....	0.82	20.8	Cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.3	16.3	88	S	.....	.....	1	1c	0	.....	.....	0.039	1.0	Clear	M. V. de Leon, M. E.
Puebla	23.40	594.3	30.06	763.5	56.5	13.6	86	N	4.2	1.9	.....	4cn	4ns	.....	.....	0.38	9.67	Cloudy	Prof. B. Gonzalez.
Tlacotalpam	29.96	761.0	29.97	761.3	77.9	25.5	88	Calm	.....	.....	0	0	10n	.....	.....	0	0	Gloomy	M, M. Cházaro.
San Luis Potosi	24.22	615.1	30.14	765.6	62.5	16.9	49	E	3.1	0.4	.....	.....	10	.....	E	0.197	0.5	Covered	G. Barroeta, M. D.
Vera-Cruz	29.98	761.6	30.01	762.3	77.0	25.0	83	NW	1.8	0.8	.....	.....	8kn	.....	.....	0.441	11.2	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	55.4	13	78	NE	.....	.....	1	3	2	SW	E	0	0	½ cloudy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.36	593.3	30.11	764.9	54.7	12.6	89	NE	0	0	.....	1	2	Calm	Calm	0.571	14.5	.....	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.39	721.2	30.03	762.6	77.9	25.5	87	Calm	0	0	.....	0	9	.....	SE	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	29.98	761.6	29.98	761.6	63.3	17.4	.....	W	.....	.....	4	.....	.....	.....	.....	0.602	15.3	.....	
Groningen	29.67	753.5	29.72	754.9	62.8	17.1	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.331	8.4	.....	
Helder	29.81	757.2	29.81	757.2	64.0	17.8	.....	W	.....	.....	5	.....	.....	.....	.....	0.094	2.4	.....	
Hellevoetsluis	29.91	759.8	29.91	759.8	63.1	17.3	93	W	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.85	758.3	29.90	759.5	64.4	18.0	86	WSW	.....	.....	4	.....	8	.....	.....	0.291	7.4	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.71	754.6	29.76	756.0	63.3	17.4	76	NNW	8.5	3.8	.....	.....	1	.....	.....	0	0	.....	
Brönö	29.66	753.4	29.70	754.4	60.4	15.8	71	NNW	9	4	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.56	750.9	29.71	754.5	65.7	18.7	77	Calm	0	0	.....	.....	7	.....	.....	0.059	1.5	.....	
Tromsö	29.67	753.6	29.71	754.7	51.8	11.0	85	NNE	13	6	.....	.....	5	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.03	763.4	30.21	768.1	73.0	22.8	80	SW	4.5	2	.....	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.06	738.0	30.02	762.5	88.6	31.4	17	ESE	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.0	30.13	765.2	76.8	24.9	48	NNE	13.7	6.1	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.73	755.2	30.08	764.0	78.3	25.7	36	N	8.7	3.9	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.23	767.8	30.30	769.6	77.0	25.0	62	S	1.3	0.6	.....	.....	6	.....	.....	0	0	.....	

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 35° 50′, W. 21° 39′	.....	.....	30.28	769.1	75.2	24	.....	NE	.....	.....	3	.....	5	.....	NE	2	.....	D. clouds	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	30.05	763.3	66.2	19.0	.....	WSW	.....	.....	1	.....	2	.....	W	1	.....	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.99	761.8	83.3	28.5	.....	SW	.....	.....	1	.....	9	.....	SW	2	S	Overcast	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 7° 51′, E. 13° 04′	.....	.....	30.00	761.9	75.7	24.3	.....	SW	.....	.....	3	.....	7	.....	SW	2	SSW	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.91	759.6	82.4	28.0	.....	SW	.....	.....	1	.....	4	.....	SW	0	.....	D. clouds	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.53	750.0	29.93	760.3	72.5	22.5	49	W	11	5	.....	.....	3k	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.48	748.7	29.88	759.0	67.6	19.8	66	S	2	1	.....	.....	4	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.58	751.4	29.82	757.3	66.0	18.9	71	SW	4	2	.....	.....	8n;ck	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.82	757.3	29.83	757.7	64.9	18.3	51	SSE	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.25	743.0	29.85	758.3	76.3	24.6	56	SSW	13	6	.....	.....	10ksn	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.99	761.7	30.06	763.5	82.8	28.2	45	S	9	4	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.11	764.8	30.13	765.3	80.8	27.1	53	NNE	4	2	.....	.....	1	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.53	750.1	30.07	763.6	69.6	20.9	63	S	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.86	758.5	30.06	763.5	77.2	25.1	45	ENE	9	4	.....	.....	1k	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.96	760.9	29.98	761.4	66.4	19.1	63	SSE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.62	727.0	29.97	761.1	82.4	28.0	33	E	4	2	.....	.....	5k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.18	766.6	30.10	764.5	76.5	24.7	39	NE	4	2	.....	.....	1k	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.60	751.8	30.05	763.3	71.2	21.8	43	NE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.86	758.4	30.11	764.9	75.0	23.9	50	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.11	739.3	30.03	762.8	64.0	17.8	54	N	2	1	.....	.....	7cksn	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.79	756.6	30.02	762.4	69.1	20.6	45	NNW	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	
Tashkend	28.30	718.8	29.93	760.3	75.9	24.4	53	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.26	743.2	29.78	756.4	51.6	10.9	89	SW	4	2	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.43	747.5	29.71	754.7	55.4	13.0	94	SW	2	1	.....	.....	7	.....	.....	.....	.....	Raining	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.67	753.6	29.81	757.2	73.0	23.1	95	Calm	0	0	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 434.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.99	761.7	30.09	764.3	78.8	26	64	SE	0.9	0.39	.....	2	6	W	.....	0	0	Misty	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.20	767.0	30.25	768.4	70.0	21.1	69	N	2.4	1.09	.....	1	7	SW	.....	0	0	Almost cov.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.26	692.3	.....	.....	66.2	19.0	69	NE	9.9	4.44	.....	.....	.....	.....	.....	0	0	Clear.	Domingo Martin y Perez
Madrid, Royal Observatory	27.89	708.3	29.97	761.3	89.1	31.7	31	SW	6.0	2.67	.....	3	0	SW	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.93	760.3	30.08	763.9	86.5	30.3	54	NE	4.4	1.97	.....	2	6	W	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.27	743.5	30.15	765.9	69.8	21.0	61	NE	20.5	9.17	.....	2	3	NE	.....	0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.2	30.03	762.8	78.3	25.7	89	E	5.6	2.5	.....	7c;cs	0	.....	.....	0.059	1.5	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.6	30.04	763.0	84.2	29.4	60	WNW	5.8	2.6	.....	0	4	.....	SW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.93	760.2	30.02	762.5	80.2	26.8	94	S	0	0	.....	6s	4k	SE	SE	0.020	0.50	D. clouds	Leonardo de Tejeda, Ch'f Eng't.

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.72	754.9	29.76	755.9	62.2	16.8	.....	SW	.....	.....	2	.....	8	.....	.....	0	0	.....	
Umea	29.64	752.8	29.69	754.1	58.3	14.6	93	NNE	.....	.....	4	.....	10	.....	.....	0.134	3.4	.....	
Hernosand	29.60	751.9	29.65	753.2	58.6	14.7	94	N	.....	.....	2	.....	10	.....	.....	0.024	0.6	.....	
Stockholm	29.51	749.6	29.69	754.1	63.5	17.5	76	WSW	.....	.....	2	.....	9	.....	.....	0.094	2.4	.....	
Wisby	29.66	753.3	29.72	754.8	66.6	19.2	74	W	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.61	752.1	29.69	754.0	57.4	14.1	95	NW	12.5	5.6	.....	.....	10	.....	NNW	0.031	0.80	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.74	730.0	30.12	765.1	69.8	21.0	44	SSW	.....	.....	2	.....	3	.....	.....	0	0	Cloudy.....	The Observatory.
Zurich	28.52	724.3	30.11	764.8	67.5	19.7	63	W	.....	.....	2	.....	5	.....	.....	0	0	Bright.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.5 m.m.; Thermometer, +0.9 cent.; Relative Humidity, —15 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.04	763.1	84.9	29.4	54	NE	13	6.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.9	86.9	30.5	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.69	754.1	29.80	757.0	87.4	30.8	60	NW	.....	.....	1	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

CANADIAN SERIES.

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

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.64	752.8	29.93	760.2	66	18.9	.....	Calm	0	0	.....	.....	10s	.....	SW	0.75	19.1	Cloudy.....	W. R. Bigg.
*Chatham, N. B.	29.94	760.5	30.00	762.0	63	17.2	84	SW	8	3.6	.....	8cs	2ks	W	W	0	0	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island.	30.01	762.2	30.05	763.3	66	18.9	66	SW	16	7.2	.....	.....	10ks	.....	Calm	0	0	Cloudy .	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.89	759.2	66.0	18.9	98	NE	.....	.....	1	.....	10n	.....	.....	1.003	25.48	Light rain..	James Smith, M. A.
Dalhousie, N. B.	29.76	755 9	29.92	760.0	64.7	18.2	94	Calm	.....	.....	0	.....	.....	.....	.....	0	0	Overcast....	H. A. Johnson.
Esquimault, B. C.	29.87	758.7	29.92	760.0	49.3	9.6	100	Calm	.....	.....	.....	0	0	.....	.....	Inap	Inap.	Clear.	W. H. Bevis.
*Father Point, Quebec	29.84	757 9	29.87	758.7	55	12.8	87	SW	12	5.4	.....	8k	Haze	SW	Calm	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	30.02	762.5	30.08	764.0	62.0	16.7	88	S	1	0.4	.....	.....	10n	.....	.....	0.200	5.08	Cloudy.....	Prof. Harrison.
*Fort Garry Manitoba	29.01	736.8	29.81	757.2	58	14.4	98	W	5	2.2	.....	2k	5ks	W	W	0.570	14.48	Clearing.....	James Stewart.
Granton, Ontario	28.83	732.3	29.89	759.2	67	19.4	100	Calm	.....	.....	0	0	0	.....	.....	0.76	19.3	Clear	James Grant.
*Halifax, N. S.	29.99	761.7	30.12	765.0	66	18.9	68	W	6	2.7	.....	2cs	0	.....	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.54	750.3	29.89	759.2	69.5	20.8	92	SW	.....	.....	3	10cs	0	.....	.....	1.18	30.0	Thunder-storm.	Geo. Dickson, M. A.
Heart's Content, N. F.	29.94	760.5	29.97	761.2	62	16.7	77	SW	.....	.....	5	0	0	.....	.....	0	0	Fine.....	E. Weedon.
*Kingston, Ontario	29.59	751.6	29.91	759.7	69	20.6	94	Calm	0	0	.....	.....	10s	.....	Calm	1.35	34.3	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S.	30.02	762.5	30.05	763.3	70.8	21.6	59	W	14	6 3	.....	4c	0	W	.....	0	0	Fair...	C. H. Rigby.
*Montreal, Quebec	29.72	754.9	29.92	760.0	64	17.8	96	Calm	0	0	.....	.....	10s	.....	.....	0.77	19.6	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.25	742.9	29.92	760.0	66	18.9	97	NE	1	0.4	.....	5k	5ks	NE	NE	0.01	0.3	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.92	760.0	66.7	19.3	94	Calm	.....	.....	0	.....	10n	.....	.....	.....	.....	Raining.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.24	742.7	29.90	759.4	72	22.2	95	SW	5	2.2	.....	.....	10n	.....	SW	0.43	10.9	Light rain..	H. Morgan.
Port Hastings, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.28	743.7	29.90	759.4	70	21.1	89	SW	6	2.7	.....	.....	10n	.....	W	0.16	4.1	Cloudy.....	M. Payne.
*Quebec, Quebec	29.65	753.1	29.96	761.0	63	17.2	100	NW	.....	3	.....	.....	10n	.....	.....	0.33	8.4	Heavy rain.	Capt. Ashe, R. N
*Rockliffe, Ontario	29.48	748.8	29.92	760.0	68	20.0	89	E	4	1.8	.....	.....	Sm'e	.....	.....	0	0	Smoky.....	W. H. McIntyre.
St. Andrews, N. B.	30.04	763.0	30.09	764.3	60	15.6	94	SW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B.	29.95	760.7	30.11	764.8	55	12.8	100	S	10	4.5	.....	.....	Fog	.....	.....	0.38	9.7	Cloudy.....	G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.92	760.0	66	18.9	98	E	1	0.4	.....	5k	5ks	.....	.....	0.12	3.0	Cloudy.....	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.68	728.5	29.91	759.7	66.8	19.3	99	NW	5	2.2	.....	.....	10n	.....	.....	0.566	14.37	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B.	30.04	763.0	30.07	763.8	69	20.6	71	SW	11	4.9	.....	8cs	0	W	.....	0	0	Hazy.....	T. C. Hill.
*Toronto, Ontario	29.53	750.0	29.90	759.4	67	19.4	100	NE	5	2.2	.....	.....	10ks	.....	E	1.54	39.1	Light rain..	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.
.....	.....	.....	.....	.....	64.0	17.8	78	SW	.....	.....	.....	Sm'e	Sm'e	S	.....	0	0	Fair	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From —	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.76	755.9	29.98	761.5	72	22.2	90	S	8	3.6	.....	.....	10s	.....	S	0.09	2.3	Cloudy	
Alpena, Michigan	29.28	743.7	29.91	759.7	62	16.7	88	NW	2	0.9	....	0	Fog	.....	.....	0	0	Clear.	
Atlantic City, New Jersey	30.04	763.0	30.06	763.5	75	23.9	100	SW	8	3.6	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Augusta, Georgia	29.94	760.5	30.12	765.0	79	26.1	86	NE	1	0.4	.....	2c	0	SW	.....	0	0	Clear.	
Baltimore, Maryland	30.00	762.0	30.05	763.3	77	25.0	91	Calm	0	0	.....	10k	0	SW	.....	0.53	13.5	Cloudy	
Barnegat, New Jersey	30.05	763.5	30.07	763.8	76	24.4	95	SW	12	5.4	.....	.....	10s	.....	SW	0.04	1.0	Cloudy	
Bismarck, Dakota	28.28	718.3	30.14	765.5	54	12.2	72	Calm	0	0	.....	0	0	.....	.....	0.08	2.0	Clear	
Boerne, Texas	28.63	727.2	.....	.....	74	23.3	81	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Boise City, Idaho	27.18	690.4	30.14	765.5	57	13.9	62	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.91	759.7	30.06	763.5	72.5	22.5	88	S	12	5.4	.....	.....	10s;sm'	.....	SW;Calm	Inap.	Inap.	Threatening	
Brackettville, Texas	28.89	733.8	29.89	759.2	72	22.2	85	E	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
Breckenridge, Minnesota	28.92	734.6	29.89	759.2	57	13.9	87	W	10	4.5	.....	0	0	.....	.....	0.02	0.5	Clear	
Brownsville, Texas	29.94	760.5	30.01	762.2	75	23.9	95	E	2	0.9	.....	2cs	0	Calm	.....	0.25	6.3	Clear	
Buffalo, New York	29.23	742.4	29.89	759.2	72	22.2	85	S	11	4.9	.....	.....	10s	.....	SW	0.09	2.3	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	82	27.8	60	N	.....	.....	1	.....	10s	.....	N	0.10	2.5	Cloudy	
Burlington, Vermont	29.71	745.6	29.96	761.0	69	20.6	90	S	10	4.5	.....	.....	10s	.....	W	0.30	7.6	Cloudy	
Cairo, Illinois	29.64	752.8	30.02	762.5	69	20.6	90	S	4	1.8	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Camp Apache, Arizona	.....	.....	.....	.....	63	17.2	88	Calm	.....	.....	0	5ck	2s	S	Calm	Blank	Blank	Cloudy	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	67	19.4	79	Calm	.....	.....	0	5ck	0	Calm	.....	0.04	1.0	Fair	
Camp Verde, Arizona	26.79	680.4	30.28	769.1	72	22.2	76	SE	.....	.....	1	0	0	.....	.....	0.02	0.5	Clear.	
Campo, California	27.41	696.2	29.98	761.5	64	17.8	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.15	765.8	30.15	765.8	81	27.2	87	S	9	4.0	.....	2k	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.07	763.8	30.09	764.3	79	26.1	91	SW	10	4.5	.....	.....	10s	.....	SW	0.11	2.8	Cloudy	
Cape Lookout, N. Carolina	30.14	765.5	30.15	765.8	81	27.2	87	SW	8	3.6	.....	.....	10ks	.....	SW	0.03	0.8	Cloudy	
Cape May, New Jersey	30.06	763.5	30.09	764.3	76	24.4	90	S	10	4.5	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy	
Castroville, Texas	29.25	742.9	29.94	760.5	70	21.1	85	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.10	764.5	30.17	766.3	84	28.9	83	SW	1	0.4	.....	2k	0	S	.....	0	0	Fair	
Cheyenne, Wyoming	24.28	616.7	30.22	767.6	49	9.4	85	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.26	743.2	29.92	760.0	68	20.0	74	W	4	1.8	.....	Haze	Haze	.....	.....	0	0	Hazy	
Cincinnati, Ohio	29.36	745.7	29.98	761.5	73	22.8	81	W	6	2.7	.....	.....	10ks	.....	SW	0.27	6.9	Threatening	
Cleveland, Ohio	29.76	743.2	29.95	760.7	70	21.1	85	S	10	4.5	.....	.....	10ks	.....	W	0.11	2.8	Cloudy	
Coleman City, Texas	28.27	718.0	29.87	758.7	72	22.2	62	NE	4	1.8	.....	2c	0	SW	.....	0	0	Fair	
Columbus, Ohio	29.14	740.1	29.94	760.5	70	21.1	90	S	5	2.2	.....	2k	5ks	Calm	S	0.06	1.5	Fair	
Concho, Texas	28.14	714.7	29.77	756.1	70	21.1	66	SW	4	1.8	.....	5c	0	W	.....	0	0	Fair	
Corsicana, Texas	29.61	752.1	30.06	763.5	72	22.2	85	S	2	0.9	.....	2cs	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.36	745.7	29.98	761.5	67	19.4	79	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.89	733.8	30.02	762.5	71	21.7	75	S	9	4.0	.....	0	0	.....	.....	0	0	Smoky	
Denison, Texas	29.27	743.4	30.04	763.0	72	22.2	80	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	25.00	635.0	30.22	767.6	60	15.6	55	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.08	738.6	29.92	760.0	71	21.7	71	SW	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.26	743.2	29.90	759.4	68	20.0	95	Calm	0	0	.....	.....	10s	.....	Calm	1.02	25.9	Cloudy	
Dodge City, Kansas	27.45	697.2	29.66	753.4	66	18.9	79	SE	8	3.6	.....	8ck	0	Calm	.....	0	0	Cloudy	
Dubuque, Iowa	29.26	743.2	29.93	760.2	66	18.9	79	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.14	740.1	29.78	756.4	68	20.0	90	NE	1	0.4	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Eagle Pass, Texas	29.17	740.9	29.88	758.9	73	22.8	85	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.04	763.0	30.11	764.8	60	15.6	85	S	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Edinburg, Texas	.....	.....	.....	.....	75	23.9	90	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	70	21.1	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.23	742.4	29.91	759.7	73	22.8	85	S	7	3.1	.....	0	8s	.....	SW	0.06	1.5	Cloudy	
Escanaba, Michigan	29.24	742.7	29.86	758.4	68	20.0	79	S	2	0.9	.....	2c	Haze	S	.....	0	0	Hazy	
Florence, Arizona	28.43	722.1	30.03	762.7	78	25.6	86	Calm	.....	.....	0	8ck	0	Calm	.....	0	0	Fair	
Fort Craig, New Mexico	25.60	650.2	29.66	753.4	69	20.6	79	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Fort Davis, Texas	25.27	641.8	30.23	767.8	62	16.7	66	NW	2	0.9	.....	2cs	0	NE	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.52	749.8	30.04	763.0	69	20.6	85	E	1	0.4	.....	0	Haze	.....	Calm	0	0	Hazy	
Fort Griffin, Texas	28.77	730.7	30.01	762.2	68	20.0	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.84	707.1	29.68	753.9	74	23.3	63	S	1	0.4	.....	5c	0	NE	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.82	732.0	29.88	758.9	71	21.7	71	NW	1	0.4	.....	0	8s	.....	NW	0	0	Cloudy	
Fredericksburg, Texas	28.33	719.6	29.85	758.2	69	20.6	75	S	1	0.4	.....	2c	0	Calm	.....	0	0	Fair	
Galveston, Texas	30.00	762.0	30.04	763.0	79	26.1	87	E	8	3.6	.....	0	5ks	.....	E	0	0	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.29	744.0	29.92	760.0	66	18.9	84	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Indianapolis, Indiana	29.24	742.7	29.98	761.5	70	21.1	85	SW	4	1.8	.....	.....	10s	.....	SW	0.34	8.6	Threatening	
Indianola, Texas	30.00	762.0	30.02	762.5	80	26.7	87	NE	18	8.0	.....	1ck	2ks	SE	Calm	0	0	Fair	
Jacksboro, Texas	28.90	734.0	29.99	761.7	72	22.2	76	SW	3	1.3	.....	2k	0	NW	.....	0	0	Fair	
Jacksonville, Florida	30.09	764.3	30.12	765.0	84	28.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.35	745.5	29.93	760.2	72	22.2	71	SW	6	2.7	.....	5k	1s	NW	Calm	0	0	Fair	
Key West, Florida	30.02	762.5	30.05	763.3	85	29.4	72	E	10	4.5	.....	2cs;k	1ks	Calm;SE	Calm	0.05	1.3	Fair	
Kittyhawk, North Carolina	30.12	765.0	30.14	765.5	80	26.7	91	SW	10	4.5	.....	0	0	.....	.....	0.15	3.8	Clear	
Knoxville, Tennessee	29.13	739.9	30.11	764.8	69	20.6	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.13	3.3	Dense fog	
La Crosse, Wisconsin	29.16	740.7	29.86	758.4	71	21.7	75	S	8	3.6	.....	5k	0	W	.....	0	0	Fair	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	69	20.6	85	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Laredo, Texas	29.56	750.8	29.89	759.2	75	23.9	86	NE	4	1.8	.....	5k	0	SE	.....	0	0	Fair	
Lead City, Dakota	25.04	636.0	30.31	769.9	48	8.9	78	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.16	740.7	29.98	761.5	62	16.7	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.58	751.3	29.91	759.7	63	17.2	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.50	749.3	30.03	762.7	72	22.2	85	SW	3	1.3	.....	0	5ks	.....	SW	0.09	2.3	Fair	
Lynchburg, Virginia	29.42	747.3	30.08	764.0	76	24.4	81	S	4	1.8	.....	0	8ks	.....	Calm	0	0	Cloudy	
Marquette, Michigan	29.16	740.7	29.83	757.7	65	18.3	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.39	721.1	30.10	764.5	67	19.4	84	Calm	0	0	.....	5cs	5s	NW	Calm	0	0	Cloudy	
Memphis, Tennessee	29.79	756.7	30.10	764.5	72	22.2	85	SW	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.22	742.2	29.93	760.2	63	17.2	83	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Mobile, Alabama	30.06	763.5	30.11	764.8	78	25.6	91	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Montgomery, Alabama	29.88	758.9	30.11	764.8	74	23.3	81	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Morgantown, West Virginia	29.01	736.8	30.02	762.5	73	22.8	81	S	3	1.3	.....	2cs	0	Calm	.....	0.34	8.6	Fair	
Mt. Washington, N. H.	23.92	607.6	30.28	769.1	52	11.1	100	W	38	17.0	.....	.....	Fog	.....	W	0.43	10.9	Foggy	
Nashville, Tennessee	29.58	751.3	30.09	764.3	72	22.2	80	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.94	760.5	30.05	763.3	74	23.3	90	S	7	3.1	.....	.....	10s	.....	Calm	0.29	7.4	Cloudy	
New London, Connecticut	30.04	763.0	30.09	764.3	71	21.7	95	SW	12	5.4	.....	.....	10n	.....	Calm	0.08	2.0	Light rain	
New Orleans, Louisiana	30.03	762.7	30.09	764.3	79	26.1	82	N	2	0.9	.....	8ck	0	SW	.....	0	0	Fair	
Newport, Rhode Island	30.04	763.0	30.08	764.0	72	22.2	90	S	12	5.4	.....	.....	10s	.....	SW	0	0	Threatening	
New York, New York	29.89	759.2	30.06	763.5	74	23.3	95	SW	8	3.6	.....	.....	10s	.....	SW	0.50	12.7	Cloudy	
Norfolk, Virginia	30.06	763.5	30.11	764.8	79	26.1	91	SW	10	4.5	.....	.....	10s	.....	W	Inap	Inap	Cloudy	
North Platte, Nebraska	27.21	691.1	29.75	755.6	56	13.3	87	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.88	758.9	29.92	760.0	44	6.7	100	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.88	733.5	29.91	759.7	68	20.0	79	SW	4	1.8	.....	2k	2s	S	S	0	0	Fair	
Oswego, New York	29.63	752.6	29.94	760.5	72	22.2	85	SW	7	3.1	.....	.....	10s	.....	W	0.11	2.8	Cloudy	
Pembina, Dakota	29.04	737.6	29.84	757.9	56	13.3	94	NW	12	5.4	.....	0	0	.....	.....	1.14	29.0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.01	762.2	30.06	763.5	77	25.0	91	SW	10	4.5	.....	.....	10s;fg	.....	sw;Calm	0.15	3.8	Cloudy	
Phœnix, Arizona	28.74	730.0	.....	.....	81	27.2	70	E	.....	.....	1	0	8ks	.....	E	0	0	Cloudy	
Pike's Peak, Colorado	18.12	459.8	30.33	770.4	35	1.7	53	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.18	614.2	29.96	761.0	66	18.9	36	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	29.98	761.5	73	22.8	81	SW	6	2.7	.....	5k	0	SW	.....	0.05	1.3	Fair	
Port Huron, Michigan	29.26	743.2	29.89	759.2	69	20.6	95	NW	6	2.7	.....	.....	10s	.....	Calm	2.42	61.5	Cloudy	
Portland, Maine	30.01	762.2	30.06	763.5	66	18.9	89	S	3	1.3	.....	.....	10n	.....	Calm	0.13	3.3	Light raln	
Portland, Oregon	29.91	759.7	30.01	762.2	52	11.1	93	Calm	0	0	.....	.....	Fog	.....	SE	0	0	Foggy	
Prescott, Arizona	24.87	631.7	30.23	767.8	61	16.1	88	Calm	0	0	.....	2c	0	Calm	.....	0.01	0.3	Clear	
Pilot Point, Texas	29.27	743.4	30.04	763.0	75	23.9	72	SE	7	3.1	.....	0	Sm'e	.....	Calm	6	0	Smoky	
Punta Rassa, Florida	30.06	763.5	30.08	764.0	80	26.7	82	E	8	3.6	.....	2cs	0	Calm	.....	0.05	1.3	Clear	
Red Bluff, California	29.52	749.8	29.86	758.4	69	20.6	56	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.84	757.9	30.05	763.3	79	26.1	70	NE	1	0.4	.....	5k	0	NE	.....	0	0	Fair	
Rochester, New York	29.32	744.7	29.89	759.2	75	23.9	77	SW	10	4.5	.....	2ck	2s	SW	W	0.02	0.5	Fair	
Roseburg, Oregon	29.43	747.5	30.00	762.0	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.79	756.7	29.87	758.7	62	16.7	67	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.47	748.5	30.02	762.5	70	21.1	85	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.09	764.3	30.10	764.5	77	25.0	91	N	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	
St. Paul, Minnesota	29.01	736.8	29.79	756.7	70	21.1	79	SW	6	2.7	.....	5c	0	Calm	.....	0	0	Fair	
Salt Lake City, Utah	25.74	653.8	30.07	763.8	62	16.7	41	SE	2	0.9	.....	.....	10ks	.....	W	Inap	Inap.	Cloudy	
San Antonio, Texas	29.34	745.2	29.90	759.4	70	21.1	90	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.87	758.7	29.94	760.5	62	16.7	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.30	744.2	29.94	760.5	71	21.7	90	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.05	763.3	78	25.6	91	W	12	5.4	.....	2c	8ks	Calm	SW	0.25	6.3	Cloudy	
San Francisco, California	29.91	759.7	29.97	761.2	55	12.8	87	SW	8	3.6	.....	2c	5ks	W	W	0.86	21.8	Cloudy	
Santa Fé, New Mexico	23.43	595.1	29.97	761.2	54	12.2	67	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Savannah, Georgia	30.05	763.3	30.14	765.5	86	30.0	76	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Shreveport, Louisiana	29.87	758.7	30.08	764.0	71	21.7	90	Calm	0	0	.....	5c	Haze	Calm	Calm	0	0	Fair	
Silver City, New Mexico	24.39	619.5	.....	.....	63	17.2	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.13	765.3	30.17	766.3	82	27.8	83	SW	5	2.2	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Springfield, Massachusetts	29.92	760.0	30.04	763.0	75	23.9	90	S	4	1.8	.....	1k	0	SW	.....	0	0	Clear	
Stockton, Texas	26.99	685.5	29.99	761.7	67	19.4	41	SE	6	2.7	.....	.....	10s	.....	S	0.09	2.3	Cloudy	
Thatcher's Island, Mass	30.00	762.0	30.05	763.3	65	18.3	94	S	16	7.2	.....	4k	0	Calm	.....	0	0	Fair	
Toledo, Ohio	29.21	742.7	29.88	758.9	71	21.7	95	S	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Tucson, Arizona	27.28	692.9	29.83	757.7	78	25.6	58	Calm	0	0	.....	.....	10ks	.....	S	0.74	18.8	Cloudy	
Tybee Island, Georgia	30.10	764.5	30.13	765.3	81	27.2	91	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.60	751.8	.....	.....	51	10.6	53	SE	8	3.6	.....	2cs	2ks	Calm	N	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.11	739.4	29.90	759.4	75	23.9	81	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5k	0	NE	.....	0	0	Fair	
Virginia City, Montana	24.43	620.5	29.91	759.7	53	11.7	48	Calm	0	0	.....	.....	.....	.....	.....	.....	.....	.....	
Visalia, California	29.54	750.3	29.90	759.4	67	19.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.97	761.2	30.08	764.0	76	24.4	95	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	71	21.7	68	E	.....	.....	1	.....	10ks	.....	SW	1.72	43.7	Cloudy	
Wilmington, N. Carolina	30.07	763.8	30.15	765.8	80	26.7	91	S	1	0.4	.....	0	2s	.....	W	0.45	11.4	Fair	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	53	11.7	42	NE	2	0.9	.....	0	0	.....	.....	0.07	1.8	Clear	
Wood's Holl, Mass	30.05	763.3	30.10	764.5	72	22.2	90	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.73	729.7	29.98	761.5	64	17.8	73	NW	8	3.6	.....	.....	10s	.....	SW	0	0	Threatening	
Yuma, Arizona	29.70	754.4	29.86	758.4	79	26.1	73	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.97	761.2	30.02	762.5	40.5	4.7	96	NE	7	3.1	.....	3c	4s	NW	N	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.01	762.2	30.03	762.7	81	27.2	87	SE	2.4	1.1	.....	8c	0	NE	.....	0.11	2.8	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.99	761.7	30.02	762.5	79	26.1	82	Calm	0	0	.....	4c	0	.....	.....	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	87	E	2	0.9	.....	2c	5ks	E	.....	Blank	Blank	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	82	27.8	79	Calm	0	0	.....	8c	2ks	Calm	S	0	0	.....	James Gall.
Navassa, W. I.	29.92	760.0	30.00	762.0	84	28.9	.....	NE	8.3	3.7	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	77	25.0	79	E	.....	.....	2	.....	8ks	.....	E	1.360	34.54	Cloudy	C. J. Hering
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	67.0	19.4	82	Calm	0	0	.....	0	3ks	.....	.....	0.59	15.0	.....	Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Fruckettville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.7 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,576 ft., or 1,486.2 m.; Mt. Washington, 6,256 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.5 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.458 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33m.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.20	767.1	82	27.8	82	27.8	87	NW	0.2	0.1	.....	.....	2	.....	NW	0.30	7.6	.....	.....	Fair.....	
Navy Yard, Portsmouth, N.H	30.00‡	762.0‡	.....	.....	69	18.9	89	SW	2	0.9	.....	.....	10	.....	.....	0.1	3.	.....	.....	Foggy	
Naval Hospital, Yokohama, Japan.....	29.95*	760.7*	72.2	22.3	70	21.1	78	E	.....	.....	3	.....	3k	.....	E	0	0	.....	.....	Fair.....	
Adams. S. 25° 02′, W. 170° 37′.....	30.09	764.3	65	18.3	61	16.1	100	SW	.....	.....	2	.....	8	.....	SW	Blank	Blank	Long	SW	D. clouds.....	
Alliance, Villafranca, France	30.00‡	762.0‡	.....	.....	77	25.0	73	SSW	.....	.....	1	.....	9	.....	SSW	.....	.....	Light	S	Pleasant.....	
Ashuelot. Yokohama, Japan	30.03	762.7	72	22.2	71	21.7	75	ENE	.....	.....	3	.....	10	.....	ENE	.....	.....	Mod'ate	ENE	Cloudy.....	
Alaska, S. 52° 24′, W. 68° 44′.....	29.66	753.4	50	10.0	39	3.9	100	WNW	.....	.....	3	.....	10	.....	SE	0.08	2.0	Smooth	.....	Misty.....	
Canonicus, New Orleans, La.....	30.10	764.5	55	12.8	78	25.6	91	SW	.....	.....	4	.....	1	.....	SW	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	30.06‡	763.5‡	.....	.....	77	25.0	91	SW	6	2.7	.....	.....	8	.....	W	0.6	15.	.....	.....	Foggy	
Constitution, Havre, France.....	30.19‡	766.8‡	.....	.....	63	17.2	89	W	.....	.....	4	.....	9	.....	W	.....	.....	.....	.....	Pleasant... ..	
Despatch, Constantinople, Turkey	30.02‡	762.5‡	.....	.....	82	27.8	63	NE	.....	.....	3	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Franklin, Norfolk, Va.....	30.25	768.3	79	26.1	78	25.6	100	SSW	9.0	4.3	.....	.....	10	.....	SW	0	0	.....	.....	Cloudy.....	
Gettysburg Toulon, France.....	29.97‡	761.2‡	.....	.....	81	27.2	100	NNW	.....	.....	4	.....	8	.....	.....	0	0	.....	.....	Fair.....	
Guard, S. 14° 28′, W. 37° 56′..	30.28	769.1	80	26.7	80	26.7	66	SE	.....	.....	4	.....	5	.....	SE	.....	.....	Mod'ate	SE	Fair.....	
Hartford, Rio de Janeiro, Brazil ...	30.29	769.4	.....	.....	70	21.1	70	WNW	3.0	1.3	.....	.....	2	.....	SE	0	0	.....	.....	Fair.....	
Marion, Leghorn, Italy.....	29.98	761.5	79	26 1	79	26.1	82	WSW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Michigan, Erie, Pa.....	29.49	749.0	74	23.3	72	22.2	85	SSW	.....	.....	4	.....	10	.....	SSW	.....	.....	.....	.....	Cloudy	
Monocacy, Yokohama, Japan	29.92‡	760.0‡	.....	.....	72	22.2	80	NE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.....	30.35†	770.9†	.....	.....	85	29.4	83	Calm	0	0	.....	.....	2	.....	SE	0	0	.....	.....	Fair.....	
Onward, Callao, Peru.....	30.12†	765.0†	.....	.....	62	16.7	77	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty..... .	
Passaic, Washington, D. C.....	30.09	764.3	79	26.1	78	25.6	100	SW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China.....	29.87	758.7	80	26.7	76	24.4	73	SE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clearing.....	
Plymouth. New York, N. Y..... ...	30.17	766.3	76	24.4	75	23.9	95	SW	.....	.....	1–2	.....	10	.....	NW	.....	.....	.....	.....	Misty.....	
Ranger, Hong-Kong, China	29.92	760.0	86	30.0	86	30.0	83	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	29 95	760.7	76	24.4	76	24.4	95	NE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.05‡	763.3	.....	.....	78	25.6	91	SW	.....	.....	2	.....	10	.....	SW	0.41	10.4	.....	.....	Cloudy.....	
Saratoga, Newport, R. I.....	30.07*	763.8*	.....	.....	72	22.2	95	S	.....	.....	3	.....	10	.....	N	0	0	.....	.....	Misty.....	
St. Louis, League Island, Pa	30.03	762.7	78	25.6	77	25 0	91	SW	9	4.0	.....	.....	10	.....	wsw	0.2	5.	.....	.....	Cloudy..... .	
Supply, Havre, France.....	30.20	767.1	68	20.0	59	15.0	100	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Swatara, Boston, Mass.....	30.08‡	764.0‡	.....	.....	69	20.6	95	SW	.....	.....	3	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.....	
Trenton, Cherbourg, France.....	30.10‡	764.5‡	.....	.....	66	18.9	68	NNW	.....	.....	3-4	.....	10	.....	N;W	0	0	.....	.....	Overcast.....	
Tuscarora. Off La Paz, Mexico.....	29.74	755.4	73	22.8	73	22.8	85	S	.....	.....	2	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Vandalia. Villafranca, France.....	29.97‡	761.2‡	.....	.....	78	25.6	78	SSW	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.10‡	764.5‡	.....	.....	73	22.8	85	SW	8	3.0	.....	.....	10	.....	Calm	0	0	.....	.....	Cloudy.....	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.			Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co operation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 42° 10′ W. 124° 50′		29.98*	761.5*				NW			3		Fog				Mod'ate	NW	Foggy	Capt. Seabury.
S. S. City of Peking, Yokohama, Japan		29.97	761.2	70	21.1	90	NE	10	4.5			10		NE				D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 10° 30′, W. 86° 36′		29.98†	761.5†	82	27.8	83	N			3		7		SE	Blank	Small	NNE	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 42° 09′, W. 124° 50′		29.97†	761.2†	60	15.6	88	NE			2		0			0	Mod'ate	W	Foggy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.64*	752.8*	79	26.1	??	SW			2		ks		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 37° 07′, E. 161° 14′		30.07†	763.8†	78	25.6	100	SE			5		clr		SE	0	Swell	SE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Delaware Bay		30.09*	764.3*	76	24.4	95	WSW			1								Clear	Captain Sargent.
S. S. Ohio, N. 51° 31′ W. 10° 22′		30.18	766.8	68	20.0	74	WNW			1		6?		WNW	0	None		Clear?	Captain Morrison.
S. S. Pennsylvania, N. 49° 45′, W. 31° 00′		29.61†?	752.1†?	59	15.0	100	SSW			5		10		SSW	Blank	Heavy	SW	Cloudy	Captain Harris.

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

RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 48′, W. 7° 06′		30.16*	766.1*				NW	10	4.5			4		NW		Mod'ate	W	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

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

MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller																			Capt. James Jorgensen
Schooner Florence, Niantlic, N. 65°, W. 66°		30.04*	763 0*	38.5	3.6		NW			1	8ck	2ks	NW	SE	0			Clearing	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 2, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	29.93	760.1	70.2	21.2	82	Calm	.....	.....	0	.....	9	.....	.....	0	0	Covered.....	
Nemours	.....	.....	30.00	762.1	82.4	28.0	84	ESE	.....	.....	5	.....	5	.....	.....	0	0	Cloudy.....	Kesxuche.
Algiers	.....	.....	30.01	762.3	82.8	28.2	66	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Tourillere.
La Calle	.....	.....	30.07	763.7	84.6	29.2	63	NNW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Foufrede.
Tunis	.....	.....	29.99	761.7	97.0	36.1	42	E	.....	.....	4	.....	0	.....	.....	0	0	Clear.....	Jacques.
Sfax	.....	.....	30.06	763.5	89.6	32.0	.....	NNE	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	Gau.
Saida	.....	.....	30.02	762.4	92.7	33.7	28	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Herbin.
Tebessa	.....	.....	30.02	762.6	89.6	32.0	8	NW	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	Watrin.
Geriville	.....	.....	30.04	763.1	91.8	33.2	29	SE	.....	.....	0	.....	6	.....	.....	0	0	Cloudy.....	Brugnlaux.
Laghouat	.....	.....	30.08	764.1	95.0	35.0	15	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Bertrand.
Biskra	.....	.....	30.00	762.0	101.8	38.8	26	E	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Chauvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

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

Agram	29.49	749.0	30.03	762.7	64.6	18.1	61	NE	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. Ivan Stozu.
Cracow, I. R. Observatory	29.25	742.9	29.99	761.8	69.8	21.0	67	W	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.09	738.9	29.93	760.3	74.1	23.4	61	N	.....	.....	2	.....	9k	.....	S	0	0	.....	Julius Mikolik.
Gratz	28.97?	735.7?	30.20?	767.1?	63.3	17.4	85	S	.....	.....	2	.....	10	.....	.....	0.049	1.50	.....	Andreas Rospini.
Hermannstadt	28.48	723.5	29.88	758.9	82.6	28.1	66	SE	.....	.....	4	.....	3	.....	.....	1.216	30.88	Thunder-storm.	Prof. A. Gottschling.
Kremtmünster	28.78	731.0	30.10	764.5	63.0	17.2	78	N	.....	.....	2	.....	10	.....	.....	0.197	5.0	.....	Prof. C. Wagner
Lemberg	28 97	735 9	29.92	760.0	71.1	21.7	72	NE	.....	.....	1	.....	8	.....	.....	0.024	0.6	.....	Dr. T. Stanecki.
Pola	29.78	756.4	29.89	759.1	77.0	25.0	50	ENE	.....	.....	6	.....	4 km	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.18	748.9	29.93	760.2	75.4	24.1	69	N	.....	.....	1	.....	7	.....	.....	0.079	2.0	.....	Julius Csics, S. J.
Szegedin	29.67	753.5	29.93	760.1	85.3	29.6	65	NW	.....	.....	2	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.87	758.8	29.98	761.4	70.9	21.6	74	ENE	.....	.....	3	.....	10	.....	.....	Inap.	Inap.	Cloudy.....	P. Busin.
Vienna	29.35	745.4	30.05	763.2	67.1	19.5	65	W	.....	.....	1	.....	9	.....	.....	0.018	1.1	.....	I. R. Central Met. Ob's'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.		
Aberdeen	30.04	763.0	30.13	765.3	57.8	14.3		SSE	18	8.0			5			0.075	1.91	Blue sky	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	65	18.3		S			2		3					Blue sky	George Carrick.
Armagh, Observatory			30.13	765.3	63.9	17.7		S	22	9.8			7					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			30.22	767.6	64.1	17.8		SW	13	5.8			9					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.84	757.9	30.24	768.1	61.8	16.6		W			1		3			0.01	0.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.97	761.2	30.00	762.0	82	27.8		SE			4		8					Overcast	Pvt. G. W. Roberts, A. [H.O.
Cambridge, Observatory			30.28	769.1	63.5	17.5		W			1		10					Overcast	H. Todd.
Cardington			30.26	768.6	66.0	18.9		NW			1		9					Overcast	John McLaren.
Chatham, School M. E.	30.16	766.1	30.29	769.4	63.2	17.3		NW			1		9					Overcast	Lt. Cl. C. N. Martin, R. E.
Dartmoor	28.73	729.7	30.19	766.8	60.0	15.6		W			5		3					Fine	Alexander Watt.
Donaghadee	30.12	765.0	30.15	765.8	64	17.8		SSE			4		8					D. clouds	J. Mac Gowan.
Dover	30.26	768.6	30.29	769.4	65	18.3		W			3		1					Hazy	J. Costello.
Eccles, (near Manchester)			30.23	767.8	67.7	19.8		SW	3.5	1.6			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	30.10	764.5	30.32	770.1	66.2	19.0		SW			2		6					D. clouds	The Staff.
Fort Napier, (Natal)	27.52	699.0	29.83	757.7	71.0	21.7		NE			3		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.76	755.9	29.99	761.7	83	28.3		SW			2		4					D. clouds	
Galway, Queen's College			30.03	762.7	62	16.7		SW			4		8					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.01	762.2				NE			6		6					Gloomy	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	29.93	760.2	30.13	765.3	63.3	17.4		WSW			3		8					Gloomy	D. G. Maclean.
Great Yarmouth	30.26	768.6	30.26	768.6	61	16.1		NNE			1		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.13	765.3	30.30	769.6	65.7	18.7		WSW			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.13	765.3	30.35	770.9	62	16.7		WSW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.29	769.4	68	20.0		SW			2		1c			0	0	Fine	M. P. Moyle.
Holyhead	30.16	766.1	30.21	767.3	64	17.8		SSW			4		8					D clouds	John Tilston.
Jersey	30.08	764.0	30.37	771.4	63.0	17.2		SW			1		10					Overcast	J. Fisher.
Kew, Observatory	30.27	768.8	30.30	769.6	63.8	17.7		WSW	7	3.1			8					D. clouds	The Staff.
Kingstown	30.15	765.8	30.18	766.6	66	18.9		SSE			3		7					D. clouds	George Mitchell.
Leicester, Museum			30.27	768.8	62.7	17.1		NW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.81	757.2	29.88	758.9	88	31.1		NW			1		0					Blue sky	Sergt. Beckett.
Nairn	30.03	762.7	30.10	764.5	64	17.8		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.06	763.5	86.5	30.3		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.09	764.3	30.28	769.1	67.3	19.6		WSW			2		7c;k		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.75	755.6	30.27	768.8	60.9	16.1		WSW			2–3		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.30	769.6	65	18.3		WSW			1		10					Overcast	H.E. Bellamy.
Plymouth	30.24	768.1	30.32	770.1	66.1	18.9		S			3		8					D. clouds	John Merrifield.
Roche's Point	30.16	766.1	30.20	767.1	66	18.9		SW			4		8					Cloudy	W. Kennedy.
Saint Ann's Head	30.09	764.3	30.26	768.6	63	17.2		SSW			3		5					D clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			30.08	764.0	57.5	14.2		SSE	16	7.2			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.86	758.4	89.7	32.1		NE			2		0					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.99	761.7	30.27	768.8	64.7	18.2		SW			2		7			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.16	766.1	30.19	766.8	71.9	22.2	60	SW			3		1			0.190	4.83	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.84	757.9	30.25	768.3	64.0	17.8		SW			2		6					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	30.08	764.0	30.29	769.4	63.4	17.4		NW			1		8					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			30.06	763.5	61	16.1		SE			2		7					D. clouds	John Trotter.
Truro, Royal Institution			30.33	770.4	70	21.1		SW			6		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.12	765.0	65.0	18.3		S	34	15.2			7					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.62	752.3	61.0	16.1	76	W			2		6k			0.11	2.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.90	759.4	30.09	764.3	72.5	22.5	55	SE	14.0	6.3		0	1			0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	54.0	12.2	67	N	16	7.2			5			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

MARINE SERIES. VESSELS.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 41° 30', W. 67° 0'			30.05	763.3	64	17.8		SW			4		9			4		Foggy	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 40° 5', W. 15° 55'			30.16	766.1	68	20.0					7		5			2	NE	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N.
Schooner Traveller																			Capt. Alex. Simpson. [R.
Barque Virginia																			Capt. W. Spratly.

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26 26	667.0	.....	.....	65.3	18.5	90	NE	.....	.....	1	2c,s	.....	.....	.....	Inap.	Inap.	.....	Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.90	759.4	29.95	760.6	64.9	18.3	72	NW	.....	.....	2	.....	6	.....	.....	.....	.....	.....	
Fanöe	30.01	762.2	30.03	762.7	60.8	16.0	83	WNW	.....	.....	6	.....	9	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Farôe)	29.94	760.4	29.97	761.3	62.0	11.1	91	S	.....	.....	4	.....	10	.....	.....	.....	.....	Foggy	
Vestervig	29.82	757.3	29.98	761.6	62.6	17.0	86	NW	.....	.....	6	.....	4	.....	.....	.....	.....	.....	
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

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

Alençon, Normal School	29.81	757.2	30.36	771.2	66.9	19.4	77	N	.....	.....	1	.....	5	.....	S	0.008	0.2	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.99	761.7	30.07	763.7	74.5	23.6	41	NNW	.....	.....	6	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.73	755.1	30.28	769.0	65.8	18.8	69	NE	.....	.....	1	.....	8n	.....	NE	0.008	0.2	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	30.04	763.1	30.32	770.2	68.0	20	59	NW	.....	.....	1	.....	8	.....	NW	0.004	0.10	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.38	746.3	30.27	768.8	65.5	18.6	69	ENE	.....	.....	2	.....	2	.....	SW	0.150	3.8	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.68	753.9	30.21	767.4	70.7	21.5	87	SW	.....	.....	1	.....	5ck	.....	WSW	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.05	763.3	30.30	769.5	72.7	22.6	66	S	.....	.....	1	2c	.....	Calm	.....	0	0	.....	The Staff.
Carcassonne, Normal School	29.80	756.9	30.20	767.0	78.8	26.0	40	W	.....	.....	2	.....	2	.....	W	0	0	Slightly cl'dy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.69	754.2	30.23	767.9	77.5	25.3	76	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'	29.98	761.4	30.29	769.4	66.6	19.2	72	SE	.....	.....	1	.....	5k	S	S	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.93	734.7	30.26	768.6	66.2	19.0	60	N	.....	.....	1	.....	10	.....	N	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.41	747.0	30.27	768.9	62.2	16.8	81	WNW	.....	.....	1	.....	10kn	.....	WNW	0	0	Covered	Dr. Coulet, Director.
Commune de Grèasque*	28.89	733.9	30.04	762.9	82.6	28.1	43	NW	.....	.....	2	.....	2	NW	.....	0	0	¼ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.14	765.6	30.35	771.0	64.0	17.8	78	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.02	762.4	30.32	770.1	66.0	18.9	57	NW	.....	.....	3	.....	5	.....	N	0.16	4.	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.35	745.5	30.22	767.5	64.4	18	72	NE	.....	.....	1	.....	5	.....	NW	0.016	0.40	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.33	770.4	30.37	771.3	66.6	19.2	91	NNE	.....	.....	3	.....	2	NNE	.....	0	0	Partly cl'dy	M. Galzin, Director
Mirecourt, Normal School	29.16	740.6	30.19	766.7	64.2	17.9	74	W	.....	.....	1	.....	10k	.....	NE	0.12	3.	Hazy	M. Barbier, Director.
Nismes, Normal School	29.93	760.3	30.15	765.7	78.4	25.8	56	N	.....	.....	6	2c	.....	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.11	739.4	30.15	765.9	68.9	20.5	51	NNW	.....	.....	1	.....	k	N	NNW	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.40	645.1	.....	.....	44.2	6.8	100	N	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.31	769.9	30.34	770.7	73.0	22.8	60	NNE	.....	.....	3	.....	2	.....	NNE	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	30.22	767.6	30.30	769.7	70.2	21.2	62	WNW	.....	.....	1	.....	2	.....	W	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.34	770.7	62.8	17.1	71	NW	.....	.....	3	.....	8	.....	NW	0	0	.....	M. H. Hercouet.
Tarbes, Normal School	29.21	741.9	30.27	768.8	66.2	19	72	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.87	758.6	29.89	759.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.20	56.	.....	L'Abbé Marchès.
Lyons	.....	.....	30.23	767.9	75.0	23.9	49	.....	.....	.....	.....	.....	3	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.97	761.2	76.6	24.8	36	NW	.....	.....	6	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.97	634.2	30.28	769.2	67.6	19.8	42	SSW	.....	.....	2	.....	1	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	29.97	761.1	75.6	24.2	76	SW	.....	.....	1	.....	2	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.02	762.5	30.30	769.5	67.5	19.7	59	NNW	.....	.....	2	.....	4	.....	N	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.18	766.6	77.0	25.0	34	NE	18.6	8.33	.....	.....	1	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.75	577.9	.....	.....	53.1	11.7	.....	SW	.....	.....	1	.....	4	.....	.....	0	0	Fair	Gen'l de Nansou y
Saint Maur, (near Paris)	30.14	765.6	30.31	769.8	69.1	20.6	54	SW	.....	.....	1	.....	4	.....	NNE	0	0	.....	E. Renou.
Toulouse, Observatory	29.57	751.0	30.32	770.2	71.2	21.8	41	NW	.....	.....	3	.....	3	.....	.....	0	0	.....	The Staff.
Tours	29.75	755.6	30.30	769.6	69.8	21.0	58	WNW	.....	.....	1	.....	6	.....	N	0.008	0.2	.....	C. Marquet.
Versailles	.....	.....	30.32	770.0	68.4	20.2	47	N	.....	.....	1	.....	7	.....	.....	0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.70	754.4	29.73	755.1	75.2	24.0	98	Calm	0	0	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.26	743.2	30.11	764.7	70.7	21.5	61	WSW	.....	.....	4	.....	5	W	.....	0.04	1.	Raining.....	Prof. Dr. Hoh.
Berlin	29.84	757.9	30.01	762.2	64.6	18.1	78	NW	.....	.....	4	.....	7	.....	.....	0.291	7.4	Thunder-storm..	Prof. Arndt.
Breslau	29.48	748.7	30.01	762.2	65.5	18.6	70	W	.....	.....	3	.....	8	.....	.....	.....	.....	Raining.....	Royal University Obs'y
Carlsruhe	29.76	756.0	30.19	766.8	62.4	16.9	89	S	.....	.....	1	.....	10	NW	.....	0.307	7.8	Raining.....	Albert Senz.
Cassel	29 55	750.6	30.16	766.1	68.4	20.2	69	NNW	.....	.....	6	.....	6	NW	.....	0.057	1.45	.....	Dr. H. Möhl.
Crefeld	30.03	762.7	30.19	766.8	63.1	17.3	85	NW	.....	.....	6	.....	8n	.....	.....	0.04	1.	Raining.....	Director Lose.
Emden	30.13	765.4	30.17	766.3	63.7	17.6	67	NNW	.....	.....	3	.....	9	.....	.....	0.402	10.2	.....	Prof. Prestel.
Frankfort on the Main	29.80	756.8	30.15	765.8	68.7	20.4	.....	NW	.....	.....	2	.....	7	.....	.....	0.102	2.6	.....	Physical Society.
Friedrichshafen	28.78	731.1	30.21	767.4	58.6	14.8	84	N	.....	.....	5	.....	10	N	.....	0.244	6.2	Raining.....	M. Wilhelm.
Hamburg	30.01	762.2	30.08	764.0	60.1	15.6	93	NW	.....	.....	5	.....	10n	.....	.....	0.213	5.4	Raining.....	Captain F. Hegemann.
Kiel	30.02	762.6	30.04	763.1	64.2	17.9	69	NW	.....	.....	5	.....	10	.....	.....	0.096	2.44	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.82	757.3	29.90	759.4	67.3	19.6	77	W	.....	.....	3	.....	6	.....	.....	0.083	2.1	.....	Prof. E. Luther.
Köslin	.....	.....	29.89	759.3	64.9	18.3	.....	NW	.....	.....	4	.....	4	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.65	753.1	30.07	763.6	62.6	17.0	92	NW	.....	.....	4	.....	8	NW	.....	0.020	0.5	.....	Prof. Bruhns.
Memel, Naval School	29.82	757.4	29.87	758.6	66.9	19.4	81	W	.....	.....	5	.....	9n	.....	.....	.....	.....	.....	Reinbrecht and Skalw
Neufahrwasser	29.89	759.2	29.91	759.6	64.0	17.8	86	SW	.....	.....	2	.....	10	.....	.....	0.102	2.6	Thunder-storm..	A. Lothes.
Posen	29.70	754.3	29.98	761.4	68.0	20.0	70	S	.....	.....	1	.....	10	.....	.....	0.035	0.9	.....	Dr. Magener.
Strassburg (in Alsace)	29.70	754.4	30.25	768.3	62.2	16.8	89	N	.....	.....	2	.....	10	WNW	.....	0.093	2.36	Raining.....	Astronomical Observatory.
Stuttgart	29.25	743.0	30.18	766.6	63.5	17.5	68	NW	.....	.....	1	.....	10	.....	.....	0.008	0.2	.....	Prof. Schoder.
Treves, (Trier)	29.68	753.8	30.21	767.2	67.3	19.6	59	W	.....	.....	4	.....	4	.....	.....	0.035	0.88	Foggy.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.65	727.8	30.12	765.0	62.8	17.1	65	NNW	6.3	2.8	.....	.....	10	.....	WNW	0.016	0.4	.....	Dr. Von Bebber.
Wustrow, Naval School	29.98	761.4	30.02	762.4	65.8	18.8	77	NW	.....	.....	2	.....	4	.....	.....	0.016	0.4	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.45	748.0	29.82	757.3	95.3	35.1	.....	NE	.....	.....	4.0	.....	.....	.....	.....	.....	.....	Clear.....	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.60	751.9	29.65	753.1	87.6	30.9	74	WSW	36?	16.1?	.....	.....	1	.....	.....	0	0	D. clouds.....	
Deesa	29.28	743.6	29.75	755.6	82.4	28.0	88	Calm	.....	.....	.....	.....	10	.....	E	0	0	Overcast.....	
Bombay	29.63	752.6	29.67	753.6	85.4	29.7	80	NW	13	5.8	.....	.....	7	ENE	N	0.04	1.0	D. clouds.....	
Poona	27.72	704.0	29.70	754.4	81.0	27.0	75	SSE	.....	.....	.....	.....	9	.....	SSE	1.59	40.4	Raining	
Lahore	28.91	734.2	29.62	752.4	93.9	34.4	55	SW	0.8	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Belgaum	27.18	690.4	29.69	754.1	78.9	26.1	78	WSW	9	4.0	.....	.....	4	SE	SE	0.15	3.8	D. clouds.....	
Roorkee	28.73	729.6	29.60	751.9	87.8	30.7	74	Calm	2	0.9	.....	.....	6	.....	.....	0	0	.....	
Agra	29.12	739.6	29.68	753.8	82.7	28.2	77	SW	.....	.....	.....	.....	9	.....	SW	0	0	.....	
Nagpur	28.67	728.3	29.70	754.3	86.9	30.6	66	Calm	4.5	2.0	.....	.....	9	.....	E	0	0	D. clouds.....	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.38	746.3	29.69	754.1	82.1	27.8	87	SW	0.5	0.2	.....	.....	10	.....	W	0.44	11.2	Overcast.....	
Patna	29.50	749.2	29.68	754.0	86.2	30.1	85	E	1	0.4	.....	.....	6	E	E	0.44	11.2	D. clouds.....	
Hazaribagh	27.72	704.0	29.71	754.6	80.8	27.1	78	W	7	3.1	.....	.....	10	.....	W	0.22	5.6	Thunder-storm..	
Cuttack	29.65	753.0	29.73	755.1	87.4	30.8	73	Calm	2.8	1.2	.....	.....	.....	.....	.....	0	0	Blue sky.....	
Calcutta (Alipore)	29.71	754.7	29.74	755.3	84.7	29.3	85	SW	4	1.8	.....	.....	7	SW	.....	0	0	D. clouds.....	
Goalpara	29.33	744.9	29.72	754.8	76.1	24.5	95	Calm	3.7	1.6	.....	.....	10	.....	.....	2.05	52.1	Overcast.....	
Chittagong	29.70	754.4	29.79	756.7	82.9	28.3	89	S	.....	.....	.....	.....	8	.....	.....	0	0	Misty.....	
Sibsagar	29.37	746.1	29.71	754.5	83.2	28.4	82	SW	1.2	0.5	.....	.....	10	SW	SW	0.19	4.8	D. clouds.....	
Jubbulpore	28.37	720.6	29.73	755.1	80.3	26.8	85	NW	3.3	1.5	.....	.....	8	.....	.....	0.16	4.1	Overcast.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.61	752.0	30.00	762.0	69.4	20.8	55	N	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.85	758.3	29.96	761.0	75.0	23.9	45	ENE	28.0	12.5	.....	.....	9	N	.....	0.004	0.1	.....	Prof. Dott. Lorenzoni
Vicenza	29.79	756.7	29.98	761.4	73.4	23.0	52	E	6.3	2.8	.....	.....	5	S	.....	0.598	15.2	.....	Conte Alm. Da Schio.
Bergamo	28.68	728.4	29.95	760.7	77.7	25.4	52	WSW	.....	.....	2	.....	4	.....	.....	0.031	0.8	.....	Prof. Trionfini Carlo.
Milan	29.42	747.3	29.92	760.0	76.8	24.9	59	S	.....	.....	2	.....	2	NW	.....	0.126	3.2	.....	Prof. Schiaparelli.
Moncalieri	29.07	738.3	29.94	760.5	78.8	26.0	31	ESE	3.8	1.7	.....	.....	3	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.69	713.5	29.94	760.4	73.4	23.0	33	NW	.....	.....	4	.....	1	NW	.....	0.055	1.4	.....	Prof. D. C. Bruno.
Porto Maurizio	29.74	755.3	29.95	760.7	73.8	23.2	65	SE	.....	.....	2	.....	6	NE	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.76	756.0	29.93	760.2	77.4	25.2	54	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.65	753.1	29.95	760.8	69.1?	20.6?	80	NW	.....	.....	4	.....	10	.....	.....	0.157	4.0	.....	Prof. P. Pigorini.
Florence	29.65	753.2	29.90	759.5	80.6	27.0	39	W	.....	.....	2	.....	1	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.82	757.3	29.90	759.4	75.9	24.4	60	WSW	5.6	2.5	.....	.....	1	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.87	758.7	29.92	759.9	81.0	27.2	60	E	.....	.....	.....	.....	10	.....	.....	0.118	3.0	.....	Prof. Luigi Guidi.
Urbino	28.40	721.3	29.91	759.6	76.3	24.6	35	E	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.79	756.6	29.96	760.9	80.4	26.9	49	SW	13.0	5.8	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.78	756.4	29.97	761.3	81.5	27.5	56	WNW	.....	.....	6	.....	9	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.62	752.3	29.86	758.5	90.3	32.4	24	NE	7.4	3.3	.....	.....	1	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.78	756.5	29.97	761.2	81.5	27.5	32	NW	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.66	738.0	29.94	760.5	92.5	33.6	55	SW	1.5	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.74	755.3	29.98	761.5	80.1	26.7	73	ENE	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.83	757.7	29.91	759.6	80.8	27.1	77	NE	1.3	0.6	.....	.....	1	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.57	751.1	30.13	765.2	80.6	27.0	53	NNW	0	0	.....	.....	9	W	.....	0.059	1.5	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.27	743.4	29.47	748.5	77.2	25.1	82	NE	18.6	8.3	.....	.....	10n	.....	.....	0.066	1.68	Light rain...	I. Arai, Director. Prof. P. V. Veeder.
Tokei (Yeddo) Observatory	29.85	758.2	29.91	759.7	64.8	18.2	94	E	3.3	1.5	.....	.....	3s	.....	.....	0	0	Clear.....	
Tokei (Yeddo) University	29.80	756.9	29.89	759.3	67.4	19.7	97	E	4	1.8	.....	8cs	.....	.....	.....	0	0	Fair	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Cuernavaca	.....	.....	.....	.....	63.5	17.5	86	N	.....	.....	1	4ck	3s	.....	.....	1.922	48.8	½ cloudy....	P. Ceballos.
Guadalajara	25.14	638.6	30.10	764.6	59.4	15.2	92	N	.....	.....	1	0	Fog	.....	.....	0.047	1.2	Foggy	Prof. L. Perez.
Guanajuato	23.78	604.0	30.00	762.2	61.5	16.4	86	Calm	.....	.....	.....	6	0	.....	.....	2.283	58.0	½ cloudy....	F. Ortiz.
Leon	24.51	622.5	30.06	763.5	62.4	16.9	85	NW	.....	.....	1	3c	4k	E	Calm	0.292	7.4	½ cloudy....	Prof. M. Leal.
Mexico	23.16	588.4	30.18	766.5	55.4	13.0	90	NW	1.8	0.8	.....	0	8k	.....	.....	1.06	27.0	Cloudy.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	64.8	18.2	79	Calm	.....	.....	0	3c	2s	.....	.....	Inap.	Inap.	½ cloudy....	M. V. de Leon, M. E.
Puebla	23.42	594.9	30.09	764.3	55.2	12.9	88	NE	0.9	0.4	.....	0	2cs	.....	.....	0	0	Clear.....	Prof. B. Gonzalez.
Tlacotalpam	30.00	761.9	30.01	762.2	78.8	26	87	N	.....	.....	2	0	10ks	.....	S	0	0	Gloomy	M, M. Cházaro.
San Luis Potosi	24.31	616.8	30.19	766.7	63.0	17.2	58	E	3.1	0.4	.....	.....	10	.....	E	0	0	Covered.....	G. Barroeta, M. D.
Vera-Cruz	30.01	762.3	30.04	762.9	77.9	25.5	80	NW	1.8	0.8	.....	3ck	3ks	.....	.....	0.236	6.0	½ cloudy....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	55.4	13	79	NE	.....	.....	1	4	3	SW	E	0	0	½ covered...	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.30	591.9	30.06	763.5	53.6	12.0	90	NE	4.5	2.0	.....	0	2	.....	Calm	0.229	5.8	Almost clear	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.41	721.6	30.05	763.1	77.5	25.3	85	Calm	0	0	.....	0	1	.....	.....	0	0	Clear.....	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.29	769.3	30.29	769.3	66.2	19.0	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.295	7.5	.....	
Groningen	30.12	765.0	30.17	766.4	63.0	17.2	.....	NW	.....	.....	3	.....	.....	.....	.....	0.331	8.4	.....	
Helder	30.21	767.2	30.21	767.2	62.4	16.9	.....	NW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.24	768.2	30.24	768.2	65.5	18.6	84	NW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.19	766.8	30.24	768.0	66.0	18.9	68	NW	.....	.....	3	.....	8	.....	.....	0.079	2.0	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.96	760 9	30.01	762.3	58.3	14.6	83	NNW	20	9.0	.....	.....	3	.....	.....	0	0	.....	
Brönö	29.91	759.7	29.95	760.7	51.8	11.0	91	W	4	2	.....	.....	10	.....	.....	0.181	4.6	Foggy	
Christiania	29.72	755.0	29.87	758.6	69.6	20.9	65	SW	7	3	.....	.....	6	.....	.....	0.094	2.4	.....	
Tromsö	29.71	754.7	29.76	755.8	52.5	11.4	91	WNW	13	6	.....	.....	10	.....	.....	0.134	3.4	Light rain	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.93	760.2	30.11	764.9	72.7	22.6	91	NNE	6.9	3.1	.....	.....	5	.....	.....	1.142	29.0	.....	Dr. J. A. Sampaio.
Campo Major	29.04	737.6	30.00	761.9	91.4	33.0	12	ENE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.90	759.4	29.98	761.6	76.6	24.8	51	SW	9.4	4.2	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.3	30.00	762.0	86.7	30.4	22	NNE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.09	764.2	30.15	765.9	78.1	25.6	69	S	1.8	0.8	.....	.....	4	.....	.....	0	0	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 37° 05′, W. 22° 33′	2	.....	D. clouds	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	2	W	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	1	.....	D. clouds	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.53	750.1	29.94	760.4	71.2	21.8	57	WSW	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.47	748.5	29.87	758.8	68.7	20.4	61	W	7	3	.....	.....	5	.....	.....	.....	.....	Light rain	Astronomical Obs.
Dorpat	29.54	750.3	29.77	756.2	67.1	19.5	69	SW	4	2	.....	.....	9ck;n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.70	754.3	29.71	754.7	63.1	17.3	84	NNW	11	5	.....	.....	9ks;n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.34	745.2	29.94	760.5	74.7	23.7	56	SW	2	1	.....	.....	10ck;s	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.96	761.0	30.03	762.8	81.7	27.6	57	SSW	22	10	.....	.....	4cs	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.07	763.8	30.09	764.3	81.5	27.5	56	NW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.34	745.1	29.86	758.5	66.7	19.3	69	S	9	4	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.79	756.7	29.98	761.6	84.6	28.9	38	S	2	1	.....	.....	5ck	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.76	755.9	29.78	756.4	61.5	16.4	76	SE	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Ogorodnikof.
Tiflis	28.75	730.2	30.11	764 7	79.3	26.3	46	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.19	766.7	30.10	764 6	80.4	26.9	29	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.52	749.9	29.97	761.3	72.0	22.2	41	S	4	2	.....	.....	5c	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.77	756.2	30.03	762.7	74.1	23.4	50	S	2	1	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[ks	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	29.10	739.0	30.02	762.4	65.8	18.8	54	W	2	1	.....	.....	7c;ck;k	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.86	758.4	30.08	764.1	73.9	23.3	32	N N W	11	5	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	28.47	723.2	30.13	765.2	72.3	22.4	52	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.39	746.4	29.90	759.4	58.3	14.6	55	W	0	0	.....	.....	9	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.54	750.2	29.82	757.4	55.0	12.8	86	SE	7	3	.....	.....	6	.....	.....	.....	.....	Raining	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.67	753.6	29.81	757.2	77.2	25.1	88	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Viadivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.27 m., or 1,621.37 ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.07 m., or 1,942.27 ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	75.2	24	73	S	1.4	0.61	.....	2k	5ks	SE	.....	0.036	0.91	.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.19	766.8	30.24	768 2	74.8	23.8	58	E	1.4	0.61	.....	3	2	W	.....	Inap.	Inap.	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.28	692.8	.....	.....	67.6	19.8	62	N	10.4	4.63	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.91	709.0	30.00	762.0	89.6	32.0	40	NE	5.2	2.33	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.97	761.1	30.11	764.7	85.5	29.7	56	NNE	4.4	1.97	.....	3	4	NW	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.18	741.2	30.05	763.2	75.0	23.9	61	NE	12.2	5.47	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.99	761.6	30.05	763.3	82.0	27.8	83	E	8.5	3.8	.....	7ck;cs	0	.....	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.89	759.2	29.98	761.6	86.4	30.2	53	E	41.5	18.5	.....	4	5	W	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.4	29.99	761.7	82.0	27.8	88	S	0	0	.....	3c	3k	S	S	0.266	6.75	Clear	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.72	754.8	29.76	755.8	63.3	17.4	.....	NE	.....	.....	2	.....	8	.....	.....	0.197	5.0	.....	
Umea	29.71	754.6	29.76	755.9	61.2	16.2	81	NNW	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	
Hernosand	29.70	754.4	29.75	755.7	64.8	18.2	64	NW	.....	.....	4	.....	9	.....	.....	0.169	4.3	.....	
Stockholm	29.63	752.6	29.81	757.1	62.2	16.8	92	WSW	.....	.....	2	.....	7	.....	.....	0	0	.....	
Wisby	29.74	755.4	29.80	756.9	64.0	17.8	80	NNW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.72	754.8	29.79	756.7	66.2	19.0	70	N	7.4	3.3	.....	.....	7	.....	NW	0.049	1.24	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.78	731.0	30.17	766.3	66.7	19.3	53	NE	.....	.....	2	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.60	726.4	30.21	767.2	63.3	17.4	80	NW	.....	.....	2	.....	6	.....	.....	0.110	2.8	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.6 mm.; Thermometer, —0.7 cent.; Relative Humidity, —6 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	29.95	760.6	81.3	27.4	45	ENE	16	7.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.01	762.2	86.4	30.2	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.62	752.3	29.73	755.2	86.9	30.5	65	NW	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

CANADIAN SERIES.

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

Bathurst, N. B	29.86	758.4	29.92	760.0	63.6	17.6	91	Calm	0	0	.....	.....	7n	.....	.....	0	0	Fair	Hon. J. Ferguson.
Brockville, Ontario	29.64	752.8	29.93	760.2	70	21.1	.....	Calm	0	0	.....	.....	8s	.....	SW	0.33	8.4	Cloudy	W. R. Bigg.
*Chatham, N B	29.88	758.9	29.94	760.5	61	16.1	97	Calm	0	0	.....	5e	0	SW	.....	0.22	5.6	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.91	759.7	29.95	760 7	66	18.9	89	W	4	1.8	.....	.....	10ks	.....	Calm	0.155	3.94	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.72	754.9	29.90	759.4	70.0	21.1	93	SE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.77	756.1	29.93	760.2	63.3	17.4	100	W	.....	.....	2	.....	.....	.....	.....	0	0	Overcast	H. A. Johnson.
Esquimault, B. C	29.90	759.4	29.95	760.7	56.2	13.4	94	S	.....	.....	.....	.....	10	.....	.....	0	0	Overcast	W. H. Bevis.
*Father Point, Quebec	29.93	760 2	29.95	760 7	55	12.8	93	Calm	0	0	.....	5k	Fog	Calm	.....	0	0	Foggy	J. McWilliams.
Fredericton, N. B	29.90	759.4	29.96	761.0	66.1	18.9	89	N	1	0.4	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.27	743.4	30.09	764.3	52	11.1	100	N	3	1.3	.....	.....	Fog	.....	N	0.060	1.50	Foggy	James Stewart.
Granton, Ontario	28.90	734.0	29.96	761.0	65	18.3	94	Calm	.....	.....	0	0	0	.....	.....	0.16	4.1	Clear	James Grant.
*Halifax, N. S	29.81	757.2	29.94	760.5	68	20.0	96	W	1	0.4	.....	.....	10n	.....	W	0.109	2.77	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.00	762.0	67.7	19.8	94	W	.....	.....	3	4e	0	SW	.....	2.53	64.3	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.92	760.0	29.94	760.5	62	16.7	80	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.62	752.3	29.94	760.5	70	21.1	91	NW	3	1.3	.....	2ck	5ks	W	Calm	0.71	18.0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.87	758.7	29.91	759.7	67.6	19.8	87	S	5	2.2	.....	9ks	0	S	.....	0.06	1.5	Showery	C. H. Rigby.
*Montreal, Quebec	29.74	755.4	29.93	760.2	70	21.1	89	NW	2	0.9	.....	2k	2ks	N	.....	0	0	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.26	743.2	29.93	760.2	66	18.9	97	E	4	1.8	.....	2ck	2ks	W	W	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.24	742.7	29.96	761.0	66.7	19.3	94	Calm	.....	.....	0	.....	10n	.....	.....	1.27†	32.3†	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.32	744.7	29.99	761.7	68	20.0	100	Calm	0	0	.....	.....	Fog	.....	.....	0.07	1.8	Foggy	H. Morgan.
Port Hastings, N. S	29.89	759.2	29.94	760.5	66.4	19.1	.....	NW	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.36	745.7	29.99	761.7	62	16.7	99	W	1	0.4	.....	0	Fog	.....	W	0.20	5.1	Foggy	M. Payne.
*Quebec, Quebec	29.64	752.8	29.95	760.7	65	18.3	94	Calm	.....	.....	0	Haze	Fog	.....	.....	0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.52	749.8	29.96	761.0	64	17.8	97	NW	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	29.89	759.2	29.94	760.5	62	16.7	99	Calm	0	0	.....	.....	Fog	.....	.....	0.24	6.1	Foggy	Dr. Gove.
St. John, N. B	29.80	756.9	29.96	761.0	59	15.0	100	SE	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.27	743.4	29.96	761.0	67	19.4	96	SW	14	6.3	.....	.....	10ks	.....	NW	0.08	2.0	Heavy rain	K. Stewart.
Stayner, Ontario	29.17	740.9	29.92	760.0	67	19.4	94	Calm	0	0	.....	2ck	0	NW	.....	0.87	22.1	Fair	R. J. Cole.
Stratford, Ontario	28.72	729.5	29.96	761.0	63.0	17.2	98	Calm	0	0	.....	0	2s	.....	.....	0.064	1.62	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.89	759.2	29.92	760.0	68	20.0	91	W	5	2.2	.....	2k	8s	.....	W	0.14	3.6	Cloudy	T. C. Hill.
*Toronto, Ontario	29.60	751.8	29.97	761.2	66	18.9	95	Calm	0	0	.....	2k	Haze	W	Calm	0.61	15.5	Fair	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	63.0	17.2	83	SW	.....	.....	.....	.....	10	.....	.....	0.01	0.3	Overcast	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m. †Amount of rain-fall in 36 hours.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.73	755.1	29.94	760.5	72	22.2	80	Calm	0	0	.....	1ck	5s	W	Calm	Inap.	Inap.	Fair	
Alpena, Michigan	29.24	742.7	29.86	758.4	66	18.9	94	S	8	3.6	.....	2cs	8ks	W	SW	0.22	5.6	Cloudy	
Atlantic City, New Jersey	30.01	762.2	30.03	762.7	76	24.4	90	SW	8	3.6	.....	5ck	Haze	SW	Calm	0	0	Fair	
Augusta, Georgia	29.95	760.7	30.12	765.0	78	25.6	86	E	2	0.9	.....	2ck	5ks	S	W	0	0	Fair	
Baltimore, Maryland	30.00	762.0	30.04	763.0	74	23.3	90	SW	4	1.8	.....	Haze	Sm'e	Calm	Calm	0.11	2.8	Smoky	
Barnegat, New Jersey	30.00	762.0	30.02	762.5	75	23.9	90	SW	8	3.6	.....	8ck	0	W	.....	0	0	Fair	
Bismarck, Dakota	28.29	718.6	30.14	765.5	52	11.1	73	E	4	1.8	.....	.....	Fog	.....	E	0	0	Dense fog	
Boerne, Texas	28.66	728.0	.....	.....	72	22.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Boise City, Idaho	27.12	688.8	30.08	764.0	60	15.6	70	SE	4	1.8	.....	5ck	0	SW	.....	0	0	Fair	
Boston, Massachusetts	29.82	757.4	29.97	761.2	77	25.0	82	SW	8	3.6	.....	6cs;ck	Haze	Calm;Sw	Calm	0.25	6.3	Fair	
Brackettville, Texas	28.94	735.1	29.93	760.2	75	23.9	86	E	4	1.8	.....	0	10s	.....	E	0	0	Cloudy	
Breckenridge, Minnesota	29.07	738.4	30.06	763.5	53	11.7	100	N	7	3.1	.....	.....	Fog	.....	Calm	0	0	Foggy	
Brownsville, Texas	29.96	761.0	30.02	762.5	77	25.0	90	N	3	1.3	.....	0	0	.....	.....	0.55	14.0	Clear	
Buffalo, New York	29.29	744 0	29.96	761.0	71	21.7	90	SW	5	2.2	.....	5k	0	SW	.....	0.02	0.5	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.72	754.9	29.97	761.2	71	21.7	90	S	2	0.9	.....	.....	10s	.....	S	0.33	8.4	Cloudy	
Cairo, Illinois	29.66	753.4	30.04	763 0	75	23.9	81	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	64	17.8	89	S	.....	.....	1	.....	10s	.....	Calm	Blank	Blank	Cloudy	
Camp Grant, Arizona	25.27	641.8	30.07	763.8	71	21.7	53	E	.....	.....	2	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Camp Verde, Arizona	26.84	681.7	30.32	770.1	71	21.7	75	SW	.....	.....	1	.....	10s	.....	Calm	0	0	Cloudy	
Campo, California	27.43	696.7	30.00	762.0	59	15.0	81	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.14	765.5	30.14	765.5	81	27.2	87	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	77	25.0	91	SW	7	3.1	.....	.....	10s	.....	SW	0.21	5.3	Cloudy	
Cape Lookout, N. Carolina	30.11	764.8	30.13	765.3	83	28.3	83	SW	8	3.6	.....	2c	0	W	.....	0.02	0.5	Fair	
Cape May, New Jersey	30.04	763.0	30.06	763.5	76	24.4	90	S	10	4.5	.....	2ck	0	W	.....	0	0	Fair	
Castroville, Texas	29.30	744.2	29.97	761.2	75	23.9	90	Calm	0	0	.....	0	2s	.....	E	0	0	Fair	
Charleston, South Carolina	30.10	764.5	30.16	766.1	82	27.8	83	W	5	2.2	.....	0	8s	.....	SE	0.09	2.3	Fair	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	50	10.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.23	742.4	29.89	759.2	68	20.0	84	W	6	2.7	.....	5cs	5s	Calm	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.41	747.0	30.04	763.0	71	21.7	80	SE	3	1.3	.....	1k	Fog	SW	Calm	0	0	Clear	
Cleveland, Ohio	29.30	744.2	29.99	761.7	70	21.1	80	SW	14	6.3	.....	0	0	.....	.....	0.86	21.8	Clear	
Coleman City, Texas	28.32	719.3	29.96	761 0	64	17.8	78	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	
Columbus, Ohio	29.23	742.4	30.04	763 0	66	18.9	90	S	2	0.9	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Concho, Texas	28.21	716.5	29.86	758.4	63	17.2	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.65	753 1	30.11	764.8	70	21.1	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.39	746.5	30.01	762.2	67	19.4	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Decatur, Texas	28.95	735.3	30.08	764.0	75	23.9	77	SW	6	2.7	.....	4k	0	.....	.....	0	0	Fair	
Denison, Texas	29.33	745.0	30.10	764.5	74	23.3	72	Calm	0	0	.....	2k	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.97	634.2	30.19	766.8	60	15.6	55	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.20	741.7	30.04	763 0	70	21.1	66	W	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.30	744.2	29.94	760.5	68	20.0	84	SW	2	0.9	.....	0	2s	.....	Calm	0.15	3.8	Fair	
Dodge City, Kansas	27.54	699.5	29.79	756.7	62	16.7	83	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.29	744.0	29.96	761.0	65	18.3	68	N	1	0.4	.....	0	1s	.....	Calm	0	0	Clear	
Duluth, Minnesota	29.30	744.2	29.96	761.0	66	18.9	84	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eagle Pass, Texas	29.32	744 7	30.04	763.0	75	23.9	90	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Eastport, Maine	29.88	758.9	29.95	760.7	60	15.6	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.48	12.2	Foggy	
Edinburg, Texas	.....	.....	.....	.....	76	24.4	91	Calm	.....	.....	0	0	0	.....	.....	Inap.	Inap.	Clear	
El Paso, Texas	.....	.....	.....	.....	70	21.1	65	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.28	743.7	29.97	761.2	72	22.2	85	SW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Escanaba, Michigan	29.24	742.7	29.86	758.4	65	18.3	89	N	11	4.9	.....	.....	10s	.....	N	0	0	Cloudy	
Florence, Arizona	28.49	723.6	30.09	764.3	77	25.0	77	Calm	.....	.....	0	.....	10n	.....	W	0.85	21.6	Light rain	
Fort Craig, New Mexico	25.66	651.8	29.72	754.9	65	18.3	78	NE	2	0.9	.....	5cs	0	NE	.....	0.01	0 3	Fair	
Fort Davis, Texas	25.35	643.9	30.31	769 9	64	17.8	61	NW	6	2.7	.....	5c	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.56	750.8	30.08	764.0	73	22.8	76	SE	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Fort Griffin, Texas	28.85	732.8	30.09	764.3	68	20.0	79	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Fort McKavett, Texas	27.91	708.9	29.78	756.4	72	22.2	76	Calm	0	6	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.89	733.8	29.93	761.0	71	21.7	75	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.38	720.8	29.90	759.4	69	20.6	90	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Foggy	
Galveston, Texas	30.03	762.7	30.07	763.8	80	26.7	59	E	12	5.4	.....	.....	10s	.....	Calm	0.50	12 7	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.24	742.7	29.86	758.4	74	23.3	81	SW	13	5.8	.....	2c	2s	W	Calm	0	0	Fair	
Indianapolis, Indiana	29.25	742.9	30.00	762.0	71	21.7	85	SW	4	1.8	.....	5k	0	Calm	.....	0	0	Fair	
Indianola, Texas	30.01	763 0	30.06	763.5	80	26 7	87	NE	17	7.6	.....	2k	0	E	.....	Inap.	Inap.	Fair	
Jacksboro, Texas	28.96	735.6	30.07	763.8	72	22.2	58	Calm	0	0	.....	2k	0	NE	.....	0	0	Fair	
Jacksonville, Florida	30.00	764.3	30.12	765.0	81	27.2	87	E	4	1.8	.....	0	0	.....	.....	2.32	58.9	Clear	
Keokuk, Iowa	29.38	746.2	29.93	761.0	71	21.7	75	N	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Key West, Florida	30.03	762.7	30.06	763.5	81	27.2	78	SE	5	2.2	.....	5c	1ks	Calm	Calm	0.32	8.1	Fair	
Kittyhawk, North Carolina	30.09	764.3	30.12	765.0	81	27.2	91	SW	11	4.9	.....	2k	0	SW	.....	Inap.	Inap.	Fair	
Knoxville, Tennessee	29.15	740.4	30.12	765.0	70	21.1	88	Calm	0	0	.....	6c	0	S	.....	0	0	Fair	
La Crosse, Wisconsin	29.25	742.9	29.95	760.7	71	21.7	58	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.18	665.0	30.33	770.4	69	20.6	70	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Laredo, Texas	29.62	752.3	29.95	760.7	76	24.4	91	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.95	633.7	30.22	767.6	59	15.0	65	S	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Leavenworth, Kansas	29.22	742.2	30.04	763.0	66	18.9	84	N	5	2.2	.....	2ck	0	NW	.....	0	0	Fair	
Los Angeles, California	29.64	752.8	29.97	761.2	64	17.8	86	W	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.52	749.8	30.05	763.3	73	22 8	76	S	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.42	747.3	30.08	764.0	73	22.8	85	SW	2	0.9	.....	0	5ks	.....	Calm	0	0	Fair	
Marquette, Michigan	29.21	741 9	29.88	758.9	64	17.8	89	W	10	4.5	.....	0	5s	.....	W	0.88	22.4	Fair	
Mason, Texas	28.48	723.4	30.21	767.3	65	18.3	94	SE	1	0.4	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.82	757.4	30.13	765.3	73	22.8	81	SW	1	0.4	.....	2k	Haze	Calm	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.18	741.2	29.88	758.9	67	19.4	74	W	12	5.4	.....	5ck	0	W	.....	0	0	Fair	
Mobile, Alabama	30.08	764.0	30.12	765.0	74	23.3	90	NW	6	2.7	.....	2k	8s	Calm	W	0.07	1.8	Cloudy	
Montgomery, Alabama	29.89	759.2	30.12	765.0	75	23.9	76	N	2	0.9	.....	5ck	2s	Calm	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.05	763.3	72	22.2	76	Calm	0	0	.....	3c;ck	5s	S	SW	0.02	0.5	Cloudy	
Mt. Washington, N. H.	23.93	607.8	30.29	769.4	53	11.7	100	NW	30	13.4	.....	.....	Fog	.....	NW	0.63	16.0	Foggy	
Nashville, Tennessee	29.62	752.3	30.14	765.5	68	20.0	90	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
New Haven, Connecticut	29.88	758.9	29.99	761.7	76	24.4	91	SW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
New London, Connecticut	29.96	761.0	30.01	762.2	73	22.8	100	S	5	2.2	.....	.....	Fog	.....	S	0.35	8.9	Dense fog	
New Orleans, Louisiana	30.04	763.0	30.10	764.5	81	27.2	78	NE	6	2.7	.....	10ck	0	S	.....	0.14	3.6	Cloudy	
Newport, Rhode Island	29.95	760.7	30.00	762.0	69	20.6	100	SW	8	3.6	.....	.....	Fog	.....	.....	0.03	0.8	Dense fog	
New York, New York	29.84	757.5	30.00	762.0	73	22.8	95	SW	6	2.7	.....	1cs	8s	Calm	SW	0	0	Fair	
Norfolk, Virginia	30.04	763.0	30.10	764.5	78	25.6	91	SW	7	3.1	.....	.....	10s	.....	SW	0.13	10.9	Cloudy	
North Platte, Nebraska	27.25	692.1	29.89	756.9	57	13.9	72	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.02	762.5	30.06	763.5	58	14.4	81	SW	5	2.2	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
Omaha, Nebraska	28.88	733.5	29.93	760.2	61	16.1	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.66	753.4	29.96	761.0	71	21.7	90	SW	2	0.9	.....	.....	10n	.....	Calm	0.19	4.8	Light rain	
Pembina, Dakota	29.27	743.4	30.08	764.0	55	12.8	100	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind: Direction. From—	Wind: Velocity. Miles per hour.	Wind: Velocity. Meters per second.	Wind: Force. 0—10.	Clouds: Amount. Up'er. 0—10	Clouds: Amount. Low'r. 0—10.	Clouds: Direction. Upper. From—	Clouds: Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	OBSERVER.
Philadelphia, Pa	29.98	761.5	30.03	762.7	76	24.4	77	W	4	1.8		0	Sm'e		Calm	0	0	Clear	
Phœnix, Arizona	28.80	731.5			78	25.6	73	E			1		10n		SE	0.15	3.8	Light rain	
Pike's Peak, Colorado	18.16	459.9	30.37	771.4	36	2.2	61	N	4	1.8		0	0			0.09	2.3	Clear	
Pioche, Nevada	24.21	614.9	29.98	761.5	63	17.2	47	S	1	0.4		2ck	1s	Calm	Calm	0.09	2.3	Fair	
Pittsburg, Pennsylvania	29.25	742.9	30.02	762.5	70	21.1	90	W	2	0.9		10k	0	W		0.19	4.8	Cloudy	
Port Huron, Michigan	29.29	744.0	29.93	760.2	69	20.6	85	W	8	3.6		10k	0	W		0	0	Cloudy	
Portland, Maine	29.89	759.2	29.94	760.5	68	20.0	90	S	2	0.9		2k	Fog	W		0.44	11.2	Fair	
Portland, Oregon	30.02	762.5	30.13	765.3	57	13.9	81	NW	4	1.8			10s		Calm	0	0	Cloudy	
Prescott, Arizona	24.91	632.7	30.27	768.8	60.5	15.8	94	NE	2	0.9			10s		Calm	0.47	11.9	Cloudy	
Pilot Point, Texas	29.34	745.2	30.14	765.5	76	24.4	68	SE	2	0.9		2c	2s	S	SE	0	0	Cloudy?	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	78	25.6	86	E	7	3.1		2ck	2s	Calm	E	1.02	25.9	Fair	
Red Bluff, California	29.57	751.1	29.92	760.0	63	17.2	67	SE	3	1.3		0	Haze		Calm	0	0	Clear	
Rio Grande City, Texas	29.88	758.9	30.09	764.3	79	26.1	62	NW	3	1.3		0	0			0	0	Clear	
Rochester, New York	29.38	746.2	29.96	761.0	70	21.1	95	W	5	2.2			10s		NW	0.21	5.3	Cloudy	
Roseburg, Oregon	29.58	751.3	30.15	765.8	54	12.2	83	SE	1	0.4			10s		Calm	0	0	Cloudy	
Sacramento, California	29.85	758.2	29.93	760.2	57.5	14.2	84	S	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.01	763.0	73	22.8	76	SW	8	3.6			10n		Calm	Inap	Inap	Light rain	
St. Marks, Florida	30.10	764.5	30.11	764.8	75	23.9	95	N	4	1.8		8ck	0	S		0.35	8.9	Fair	
St. Paul, Minnesota	29.16	740.7	29.97	761.2	61	16.1	82	W	4	1.8		0	Sm'e			0	0	Clear	
Salt Lake City, Utah	25.72	653.3	30.05	763.3	67	19.4	33	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.39	746.5	29.96	761.0	74	23.3	90	NE	3	1.3		0	0			0	0	Clear	
San Diego, California	29.92	760.0	30.00	762.0	63	17.2	94	NW	8	3.6			Fog			0	0	Foggy	
Sandusky, Ohio	29.35	745.5	29.99	761.7	70	21.1	85	SW	11	4.9		0	Haze		Calm	0.03	0.8	Clear	
Sandy Hook, New Jersey	29.98	761.5	30.01	762.2	80	26.7	78	NW	12	5.4		2ck	0	NW		0	0	Fair	
San Francisco, California	29.94	760.5	30.00	762.0	57	13.9	87	SW	7	3.1			10s		Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.52	597.4	30.06	763.5	55	12.8	68	Calm	0	0		5cs	0	Calm		0.06	1.5	Fair	
Savannah, Georgia	30.05	763.3	30.14	765.5	85	29.4	79	Calm	0	0		2ck	1ks	Calm	Calm	0.38	9.7	Fair	
Shreveport, Louisiana	29.90	759.4	30.12	765.0	75	23.9	86	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico	24.42	620.3			61	16.1	78	Calm	0	0			10s		Calm	Inap.	Inap	Cloudy	
Smithville, North Carolina	30.12	765.0	30.16	766.1	79	26.1	91	N	1	0.4		5cs	1s	Calm	Calm	0.39	9.9	Fair	
Springfield, Massachusetts	29.85	758.2	29.98	761.5	77	25.0	82	SW	1	0.4		5k	0	S		0	0	Fair	
Stockton, Texas	27.07	687.6	30.07	763.8	66	18.9	45	S	4	1.8		4c	8k	S	S	0	0	Cloudy	
Thatcher's Island, Mass	29.92	760.0	29.97	761.2	67	19.4	100	SW	10	4.5			Fog			0.03	0.8	Dense fog	
Toledo, Ohio	29.31	744.5	29.96	761.0	70	21.1	85	SW	4	1.8		0	Haze		Calm	0.17	4.3	Hazy	
Tucson, Arizona	27.29	693.2	29.84	757.9	76	24.4	72	SE	4	1.8		5k	0	Calm		0	0	Fair	
Tybee Island, Georgia	30.11	764.8	30.14	765.5	81	27.2	91	Calm	0	0		0	8ks		S	0.08	2.0	Cloudy	
Umatilla, Oregon	29.63	752.6			66	18.9	54	NW	8	3.6		0	0			0	0	Clear	
Unalashka, Aleutian Islands					44	6.7	85	NW			6		10s		NW	0	0	Cloudy	
Uvalde, Texas	29.17	740.9	29.96	761.0	75	23.9	81	E	5	2.2		0	0			0	0	Clear	
Vicksburg, Mississippi																			
Virginia City, Montana	24.38	619.2	29.86	758.4	62	16.7	36	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.60	751.8	29.96	761.0	66	18.9	68	Calm	0	0		0	5s		Calm	0	0	Fair	
Washington, D. C.	29.95	760.7	30.06	763.5	75	23.9	90	Calm	0	0		0	Fog		Calm	0	0	Clear	
Wickenburg, Arizona					76	24.4	77	SW			2		10s		SE	0.08	2.0	Cloudy	
Wilmington, N. Carolina	30.06	763.5	30.13	765.3	80	26.7	82	Calm	0	0		5c	0	Calm		0.04	1.0	Fair	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	64	17.8	43	S	3	1.3		10k	0	SW		0	0	Cloudy	
Wood's Holl, Mass	29.96	761.0	30.01	762.2	71	21.7	100	SW	6	2.7		Fog	Fog	Calm	Calm	0.01	0.3	Foggy	
Yankton, Dakota	28.84	732.5	30.13	765.3	51	10.6	82	SW	1	0.4		0	0			0	0	Clear	
Yuma, Arizona	29.74	755.4	29.90	759.4	77	25.0	81	NE	5	2.2		2c	0	E		0	0	Fair	
SUB-SERIES.																			
St. Paul's Island, Alaska																			
York Factory, B. A.	30.02	762.5	30.07	763.8	39.0	3.9	100	W	15	6.7		4ck	6s	N	W	0.10	2.5	Raining	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	84	28.9	79	E	2.4	1.1		8c	0	Calm		0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.97	761.2	29.99	761.7	81	27.2	78	N			1	0	0			Blank	Blank		Robert Mason.
St. Thomas					84	28.9	79	E	6	2.7		2c	2ks	NE		0.3	8.	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	81	27.2	91	Calm	0	0		5c	2n	W	Calm	0	0		James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	84.5	29.2		E	6.7	3.0						0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	83	28.3	79	E			2	5k	0	E		0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.26	641.6			65.0	18.3	85	Calm	0	0			10s;ks			0	0		Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m., Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.458 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.25	768.3	88	31.1	80	26.7	84	NE	2	0.9	.....	.....	2	.....	NE	0	0	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	29.93‡	760.2‡	.....	.....	74	23.3	90	W	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Clear.	
Naval Hospital, Yokohama, Japan	29.90*	759.4*	72.5	22.5	72	22.2	76	E	.....	.....	3	.....	3ks	.....	N	0	0	.....	.....	Fair.	
Adams. S. 25° 17′, W. 171° 21′	30.31	769.9	64	17.8	59	15.0	100	SSE	.....	.....	4–5	.....	2	.....	SE	0	0	Mod'ate	SE	Pleasant.	
Alliance, Villafranca, France	29.95‡	760.7‡	.....	.....	76	24.4	73	SSW	.....	.....	0–1	.....	3	.....	S	.....	.....	Light	S	Hazy.	
Ashuelot. Yokohama, Japan	29.97	761.2	72	22.2	71	21.7	95	E	.....	.....	1	.....	2	.....	E	.....	.....	Smooth	.....	Clear.	
Alaska, S. 53° 10′, W. 76° 54′	29.33	745.0	49	9.4	39	3.9	91	N	.....	.....	2	.....	10	.....	S	0.32	8.1	Smooth	.....	Overcast.	
Canonicus, New Orleans, La.	30.10	764.5	56	13.3	80	26.7	91	NE	.....	.....	6	.....	3	.....	.....	.....	.....	.....	.....	Clear.	
Colorado. New York, N. Y.	30.02‡	762.5‡	.....	.....	76	24.4	86	WNW	9	4.0	.....	.....	8	.....	W	0	0	.....	.....	Foggy	
Constitution, Havre, France	30.36‡	769.6‡	.....	.....	64	17.8	89	W	.....	.....	4	.....	5	.....	WNW	.....	.....	.....	.....	Pleasant.	
Despatch, Constantinople, Turkey	29.95‡	760.7‡	.....	.....	77	25.0	69	NE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Clear.	
Franklin, Norfolk, Va.	30.22	767.6	79	26.1	78	25.6	95	WSW	4.8	2.1	.....	.....	10	.....	WSW	1.04	26.4	.....	.....	Cloudy.	
Gettysburg Toulon, France	29.90‡	759.4‡	.....	.....	81	27.2	87	WNW	.....	.....	3–4	.....	0	.....	.....	0	0	.....	.....	Clear	
Guard, Bahia, Brazil	30.24	768.1	78	25.6	78	25.6	73	E	....	.....	3	.....	5	.....	ESE	.....	.....	.....	.....	Fair.	
Hartford, Rio de Janeiro, Brazil	30.22	767.6	.....	.....	70	21.1	75	NW	4.8	2.1	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.	
Marion, Leghorn, Italy	29.96	761.0	75	23.9	75	23.9	86	W	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	29.52	749.8	74.5	23.6	72	22.2	90	SSW	.....	.....	1	.....	2	.....	SSW	.....	.....	.....	.....	Fair	
Monocacy. Yokohama, Japan	29.90‡	759.4‡	.....	.....	71	21.7	80	E	.....	.....	1–2	.....	2	.....	E	.....	.....	.....	.....	Clear.	
New Hampshire, Port Royal, S. C.	30.36†	771.1†	.....	.....	83	28.3	87	NNW	2	0.9	.....	.....	2	.....	SSW	0.225	5.72	.....	.....	Fair.	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	62	16.7	77	NNW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.	
Passaic, Washington, D. C.	29.91	759.7	78	25.6	75	23.9	100	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.	
Palos, Tientsin, China	29.91	759.7	82	27.8	78	25.6	82	Calm	.....	.....	0	.....	0.	.....	.....	.....	.....	.....	.....	Clear.	
Plymouth. New York, N. Y.	30.12	765.0	77	25.0	75	23.9	90	SW	.....	.....	2	.....	8	.....	SW	.....	.....	.....	.....	Misty.	
Ranger, Hong-Kong, China	29.90	759.4	86	30.0	85	29.4	87	WSW	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear.	
Rio Bravo, Brownsville, Texas	29.98	761.5	78	25.6	78	25.6	95	WNW	.....	.....	2	.....	2	.....	SSE	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.03‡	762.7‡	.....	.....	75	23.9	90	NW	.....	.....	1	.....	2	.....	NW	0	0	.....	.....	Hazy.	
Saratoga, Newport, R. I.	29.99*	761.7*	.....	.....	73	22.8	100	SW	.....	.....	3	.....	10	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	30.00	762.0	77	25.0	75	23.9	95	SW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	
Supply, Havre, France	30.40	772.1	64	17.8	64	17.8	73	NW	.....	.....	1	.....	2	.....	NW	.....	.....	.....	.....	Clear.	
Swatara, Boston, Mass.	29.98‡	761.5‡	.....	.....	75	23.9	95	WSW	....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Fair	
Trenton, Cherbourg, France	30.30‡	769.6‡	.....	.....	62	16.7	77	ENE	.....	.....	2	.....	8	.....	N;W	0	0	.....	.....	Cloudy	
Tuscarora, La Paz, Mexico	29.75	755.6	75	23.9	76	24.4	82	S	.....	.....	1	.....	10	.....	Calm	0	0	....	.....	Cloudy.	
Vandalia. Villafranca, France	29.95‡	760.7‡	.....	.....	76	24.4	73	SSW	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Clear.	
Wabash, Boston, Mass.	29.97‡	761.2‡	.....	.....	81	27.2	78	SW	4	1.8	.....	.....	0	.....	.....	0.08	2.0	.....	.....	Clear.	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, N. 46° 00′ W. 124° 50′		30.14*	765.5*				NNW			3		5		NW				Cloudy	Capt. Cobb.
S. S. City of Peking, N. 34° 50′, E. 140° 40′		29.91†	759.7†	72	22.2	95	N	23	10.3			5		N		Small	NNE	D. clouds	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 13° 24′, W. 89° 14′		29.96†	761.0†	80	26.7	91	N			2		4		SE	Blank	Small	S	D clouds	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, N. 37° 58′, W. 123° 02′		29.98†	761.5†	58	14.4	88	NW			3		0			0	Mod'ate	W	Hazy	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.73*	755.1*	85	29.4	87	SW			3		ks		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 37° 12′, E. 155° 20′		29.82†	757.4†	77	25.0	95	SE			6		cn		SE	Blank	Heavy	SE	Squally	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.05*	763.3*	76	24.4	100	SE			1		8		SSE				Overcast	Captain Sargent.
S. S. Ohio, St. George's Channel		30.21	767.3	68	20.0	84	NW			1		5?		Calm	0			Clear?	Captain Morrison.
S. S. Pennsylvania, N. 48° 51′, W. 37° 21′		29.87†	758.7†	61	16.1	100	SW			4		10		W	Blank	Large	W	Cloudy	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 44′, W. 14°		30.08*	761.0*				SSW	35	15.6			10		WSW		Heavy	W	Raining	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller																			Capt. James Jorgensen
Schooner Florence, Niantic		30.15*	765.8*	41.5	5.3		NW			2.5	0	1ks		NW	0			Clear	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 3, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	29.95	760.6	72.5	22.5	84	SW	.....	.....	1	.....	2	.....	.....	0.039	1.0	Fair	
Nemours	.....	.....	29.96	761.0	81.1	27.3	71	NE	.....	.....	6	.....	4	.....	.....	0	0	Cloudy	Kesxuche.
Algiers	.....	.....	30.00	762.0	79.9	26.6	63	NE	.....	.....	6	.....	1	.....	.....	0	0	Very fair	Tourtiliere.
La Calle	.....	.....	29.98	761.5	81.0	27.2	60	NW	.....	.....	5	.....	4	.....	.....	0	0	Cloudy	Foufredo.
Tunis	.....	.....	29.94	760.4	84.7	29.3	53	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	29.98	761.4	89.6	32.0	.....	NNE	.....	.....	4	.....	0	.....	.....	0	0	Clear	Gau.
Saida	.....	.....	29.97	761.3	95.5	35.3	24	N	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair	Herbin.
Tebessa	.....	.....	29.97	761.1	72.1	22.3	56	NW	.....	.....	6	.....	7	.....	.....	0	0	Very cloudy	Watrin.
Geriville	.....	.....	30.00	762.0	91.0	32.8	30	N	.....	.....	8	.....	1	.....	.....	0	0	Very fair	Brugniaux.
Laghouat	.....	.....	30.05	763.3	94.3	34.6	13	N	.....	.....	1	.....	2	.....	.....	0	0	Fair	Bertrand.
Biskra	.....	.....	29.98	761.4	101.3	38.5	28	SE	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

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

Agram	29.56	750.7	30.09	764.2	71.6	22.0	52	NE	.....	.....	5	.....	4	.....	.....	0	0	.....	Prof. Ivan Stozu.
Cracow, I. R. Observatory	29.43	747.5	30.19	766.8	64.0	17.8	78	W	.....	.....	1	.....	10	.....	.....	0.118	3.0	.....	Dr. Wierzbiski
Eperies	29.23	742.4	30.08	764.1	68.2	20.1	66	N	.....	.....	2	.....	10k	.....	S	0	0	.....	Julius Mikolik.
Gratz	29.03	737.4	30.25	768.4	68.0	20.0	61	S	.....	.....	3	.....	7	.....	.....	0.232	5.90	.....	Andreas Rospini.
Hermannstadt	28.44	722.4	29.88	759.0	65.3	18.5	94	NW	.....	.....	1	.....	10	.....	.....	0.100	2.55	.....	Prof. A. Gottschling.
Kremtmünster	28.91	734.3	30.23	767.9	63.3	17.4	76	Calm	.....	.....	0	.....	7	.....	.....	0.138	3.5	.....	Prof. C. Wagner
Lemberg	29.07	738.3	30.02	762.6	69.4	20.8	67	N	.....	.....	1	.....	5	.....	.....	0.035	0.9	.....	Dr. T. Stanecki.
Pola	29.87	758.8	29.98	761.5	77.0	25.0	43	E	.....	.....	6	.....	2s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.59	751.6	30.05	763.2	62.2	16.8	61	NW	.....	.....	2	.....	5	.....	.....	0.008	0.2	.....	Julius Csics, S. J.
Szegedin	29.77	756.1	30.04	762.9	79.5	26.4	55	NW	.....	.....	2	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.92	760.0	30.02	762.6	77.0	25.0	34	ENE	.....	.....	3	.....	1	.....	.....	0	0	Clear	P. Busin.
Vienna	29.51	749.6	30.22	767.5	66.7	19.3	63	NW	.....	.....	3	.....	6	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.		
Aberdeen	29.85	758.2	29.94	760.5	67.7	19.8		SSW	18	8.0			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.00	762.0	30.02	762.5	62	16.7		SW			3		8					Raining	George Carrick.
Armagh, Observatory			30.08	764.0	68.0	20.0		SW	13	5.8			8					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			30.15	765.8	65.4	18.6		WSW	17	7.6			9					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.74	755.4	30.14	765.5	64.2	17.9		SW			0		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.97	761.2	30.00	762.0	83	28.3		NE			3		3					D. clouds	Pvt. G. W. Roberts, A. [H. O.
Cambridge, Observatory			30.23	767.8	72.5	22.5		SW			1		1					D. clouds	H. Todd.
Cardington			30.26	768.6	70.0	21.1		W			1		3					Blue sky	John McLaren.
Chatham, School M. E.	30.14	765.5	30.27	768.8	71.2	21.8		S			1		3					Blue sky	Lt. Cl.C.N. Martin, R. E.
Dartmoor	28.77	730.7	30.22	767.6	65.0	18.3		S			2		3					Fine	Alexander Watt.
Donaghadee	30.05	763.3	30.08	764.0	67	19.4		SW			4		8					D. clouds	J. Mac Gowan.
Dover	30.23	767.8	30.26	768.6	65	18.3		WSW			2		3					¼ clouded	J. Costello.
Eccles, (near Manchester)			30.15	765.8	67.8	19.9		SW	4.8	2.2			10					Overcast	Thomas Mackereth.
Falmouth, Observatory	30.03	762.7	30.25	768.3	63.5	17.5		SE			2		1					D. clouds	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.94	760.5	70.0	21.1		NE			2		0					Blue sky	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.74	755.4	29.97	761.2	82	27.8		S			0		5					D. clouds	
Galway, Queen's College			30.05	763.3	65	18.3		WSW			3		5					D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.87	758.7	29.92	760.0				NE			6		6					Gloomy	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	29.80	756.9	30.01	762.2	62.5	16.9		SW			5		10					Threatening	D. G. Maclean.
Great Yarmouth	30.23	767.8	30.23	767.8	68	20.0		SW			2		2					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.09	764.3	30.26	768.6	71.0	21.7		WSW			1		3					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.04	763.0	30.25	768.3	65	18.3		NE			1		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.22	767.6	69	20.6		SW			2		0			0	0	Fine	M. P. Moyle.
Holyhead	30.10	764.5	30.15	765.8	64	17.8		SSW			5		10					Overcast	John Tilston.
Jersey	30.01	762.2	30.30	769.6	66.4	19.1		SE			1		0					Blue sky	J. Fisher.
Kew, Observatory	30.24	768.1	30.27	768.8	67.0	19.4		SW	11	4.9			6					D. clouds	The Staff.
Kingstown	30.11	764.8	30.14	765.5	67	19.4		Calm			0		9					Overcast	George Mitchell.
Leicester, Museum			30.21	767.3	66.5	19.2		W			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.68	753.9	29.75	755.6	82.6	28.1		W			1		2cs					D. clouds	Sergt. Beckett.
Nairn	29.80	756.9	29.87	758.7	67	19.4		SW			4		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	85.2	29.6		NE			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.04	763.0	30.22	767.6	70.0	21.1		SSW			3		5c;k		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.69	754.1	30.20	767.1	67.5	19.7		SW			4		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.25	768.3	68	20.0		S			1		5					D. clouds	H.E. Bellamy.
Plymouth	30.18	766.8	30.25	768.3	65.2	18.4		SSE			3		0					Blue sky	John Merrifield.
Roche's Point	30.13	765.3	30.17	766.3	65	18.3		SW			3		10					Dull	W. Kennedy.
Saint Ann's Head	30.06	763.5	30.22	767.6	65	18.3		SSW			2		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			29.84	757.9	60	15.6		SW	16	7.2			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.76	755.9	84.8	29.3		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.91	759.7	30.19	766.8	67.9	19.9		SW			2		7			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.06	763.5	30.09	764.3	65.8	18.8	87	SW			2		10			0.035	0.89	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.78	756.4	30.18	766.6	62.3	16.8		SW			1		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	30.06	763.5	30.28	769.1	69.6	20.9		SW			2		3					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			29.85	758.2	64	17.8		WSW			3		9					Showery	John Trotter.
Truro, Royal Institution			30.26	768.6	68	20.0		SE			4		5					D. clouds	W. Newcombe.
Valencia, Observatory			30.11	764.8	62.6	17.0		S	27	12.1			10			Blank	Blank	Misty	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.52	749.8	55.0	12.8	83	NW			6		10kn			0.05	1.3	Raining	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.85	758.2	30.04	763.1	72.1	22.3	61	E	8.5	3.8		4	5		SE	0.06	1.5	Cloudy	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	52.6	11.4	87	N	13	5.8			8					Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

Marine Series. Vessels.	Bar. corr. Inches	Bar. corr. Millimeters	Bar. red. Inches	Bar. red. Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force 0—10	Up'er 0—10	Low'r 0—10	Upper From—	Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 40° 55', W. 67° 15'			30.04	763.0	68	20.0		SW			4		9			4		Foggy	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 38° 55', W. 17° 15'			29.97	761.2	70	21.1					4		7			2	NE	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N.
Schooner Traveller																			Capt. Alex. Simpson. [R
Barque Virginia																			Capt. W. Spratly.

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.24	666.5			68.9	20.5	92	SE			2	2c	6ks;s			Inap.	Inap.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.10	764.5	30.15	765.7	64 0	17.8	59	WSW			2		10						
Fanöe	30.12	765.0	30.14	765.5	64.8	18.2	75	WSW			4		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29 22?	742.3?	29.26?	743.2?	56 5	13.6	92	WSW			6		10					Rain & fog	
Vestervig	29.89	759.1	30.06	763.4	60.8	16.0	96	WSW			6		10					Raining	

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

FRENCH SERIES.

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

Alengon, Normal School	29.84	757.8	30.39	771.8	67.3	19.6	68	NE			1		0			0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.97	761.3	30.05	763.3	79.3	26.3	46	NNW			3		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.71	754.6	30.25	768.4	70.3	21.3	50	E			2		5n		E	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	30.04	763.0	30.32	770.1	67.5	19.7	54	ENE			1		2		ENE	0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.40	746.8	30.28	769.2	68.0	20	94	NNE			2		1		W	0.08	2.	Clear.	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.78	756.5	30.28	769.0	68.0	20	87	SW			2	2c		SW		0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.93	760.3	30.18	766.5	73.8	23.2	60	SE			1		1		Calm	0	0		The Staff.
Carcassonne, Normal School	29.62	752.3	30.02	762.4	80.6	27	30	SE			1		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.74	755.3	30.28	769.2	76.3	24.6	80	N			2		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.98	761.5	30.29	769.4	69.8	21.0	87	SE			1		2			0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.1	30.19	766.7	69.4	20.8	65	NE			1		1		NE	0	0	Almost clear	Alluard, Director.
Commercy, Normal School	29.44	747.7	30.31	769.8	65.5	18.6	69	ENE			1		1k		E	0.008	0.2	Almost clear	Dr. Coulet, Director.
Commune de Gréasque*	28.97	735.8	30.11	764.8	83.3	28.5	26	N			2		0			0	0	Clear.	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	30.09	764.2	30.30	769 6	67.3	19.6	75	SW			3		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.95	760.7	30.25	768.4	69.3	20.7	53	E			4		2		E	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.27	743.5	30.12	765.0	72.7	22.6	77	N			4		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.25	768.3	30.28	769.2	70.2	21.2	89	NE			3		0			0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.21	741.8	30.23	767.9	66.0	18.9	64	N			3		5k		E	0	0	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.87	758.6	30.08	764.1	87.3	30.7	60	S			1		0			0	0		Boyer, Director.
Privas, Normal School	29.12	739.6	30.16	766.0	70.9	21.6	46	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.36	644.2			49.1	9.5	95	E			2		2			0.035	0.9	Slightlycl'dy	Alluard, Director.
Rochefort, Naval Obs'y	30.10	764.5	30.13	765.3	75.2	24.0	53	E			4		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.20	767.0	30.28	769.0	71.2	21.8	58	NW			1		0			0	0	Clear	F. Lucard, Director.
Saint Malo (Port)			30.25	768.3	66.0	18.9	82	N			3		1		SW	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.65	737.9	30.11	764.7	68.0	20	81	W			2		0			0	0	Clear	T. Haguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.93	760.1	29.95	760.8	81.0	27.2										0.83	21.		L'Abbé Marchés.
Lyons			30.27	768.9	71.4	21.9	51						4			0	0		L. Jays.
Marseilles, Observatory			30.02	762.6	79.9	26.6	38	W			2–3		0			0	0	Clear	The Staff.
Mont-Louis	25.01	635.3	30.33	770.3	65.8	18.8	31	WSW			3		2			0	0		M. Cave.
Nice			30.05	763.3	76.3	24.6	73	S			1		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.01	762.2	30.28	769.2	70.0	21.1	58	ENE			2		3		NE	0	0		Marié Davy, Director
Perpignan			30.11	764.8	77.9	25.5	31	SE	9.3	4.17			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.73	577.3			64.4	18.0		SE			1		0			0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	30.12	765.0	30.28	769.2	70.5	21.4	61	E			1		1		E	0	0	Slightly cl'dy	E. Renou.
Toulouse, Observatory	29.41	746.9	30.01	762.3	75.2	24.0	33	E			2		0			0	0		The Staff.
Tours	30.02	762.6	30.22	767.5	71.6	22.0	58	ENE			2		2		E	0	0		C. Marquet.
Versailles			30.31	769.8	73.0	22.8	37	NE			1		2			0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.84	758.0	29.87	758.6	73.8	23.2	96	N	4.5	2.0		6ck		WNW		0.008	0.2	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.43	747.6	30.28	769.2	64.8	18.2	71	W	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	30.11	764.8	30.28	769.1	66.9	19.4	54	W	.....	.....	2	.....	6	.....	.....	0.126	3.2	.....	Prof. Arndt.
Breslau	29.74	755.5	30.28	769.2	63.7	17.6	81	NW	.....	.....	3	.....	10	.....	.....	0.037	0.95	.....	Royal University Obs'y
Carlsruhe	29.87	758.6	30.29	769.4	68.0	20.0	66	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	Albert Senz.
Cassel	29.69	754.0	30.30	769.5	63.7	17.6	55	NNE	.....	.....	2	.....	5	NE	.....	0	0	.....	Dr. H. Möhl.
Crefeld	30.14	765.6	30.30	769.7	68.0	20.0	60	S	.....	.....	2	.....	7k	.....	.....	0	0	.....	Director Lose.
Emden	30.23	767.7	30.26	768.6	68.2	20.1	65	WSW	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.97	761.2	30.33	770.3	67.6	19.8	.....	E	.....	.....	1	.....	5	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.85	732.7	30.26	768.5	66.2	19.0	62	NE	.....	.....	6	.....	2	NE	.....	0	0	.....	M. Wilhelm.
Hamburg	30.19	766.7	30.26	768.5	65.5	18.6	71	WSW	.....	.....	4	.....	9k;n	.....	.....	0.028	0.7	Cloudy	Captain F. Hegemann.
Kiel	30.19	766.7	30.20	767.1	65.5	18.6	72	W	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.99	761.8	30.08	763.9	68.7	20.4	71	NW	.....	.....	5	.....	2	.....	.....	0.004	0.1	.....	Prof. E. Luther.
Köslin	.....	.....	30.15	765.8	62.6	17.0	.....	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.90	759.5	30.32	770.2	62.6	17.0	54	WNW	.....	.....	3	.....	10	NW	.....	0.134	3.4	.....	Prof. Bruhns.
Memel, Naval School	29.98	761.4	30.02	762.6	64.9	18.3	78	NW	.....	.....	4	.....	2ks	.....	.....	.....	.....	.....	Reinbrecht and Skalw ei
Neufahrwasser	30.12	765.0	30.13	765.4	67.1	19.5	71	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	A. Lothes.
Posen	29.95	760.6	30.23	767.7	67.6	19.8	65	NW	.....	.....	6	.....	9	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.78	756.3	30.32	770.0	68.0	20.0	66	NE	.....	.....	1	.....	5	E	.....	0.132	3.35	.....	Astronomical Observatory.
Stuttgart	29.35	745.6	30.28	769.0	67.5	19.7	50	E	.....	.....	1	.....	4	E	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.76	755.8	30.28	769.2	68.5	20.3	56	E	.....	.....	3	.....	1	.....	.....	0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.82	731.9	30.29	769.4	61.3	16.3	69	E	2.2	1.0	.....	.....	6ck	.....	N	0.039	1.0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.22	767.5	30.26	768.5	63.7	17.6	76	SW	.....	.....	4	.....	8	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.32	744.8	29.69	754.2	91.0	32.8	.....	SW	.....	.....	1.5	.....	.....	.....	.....	.....	.....	Clear	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.61	752.1	29.66	753.3	88.0	31.1	69	SW	25.?	11.2?	.....	.....	1	.....	.....	0	0	D. clouds	
Deesa	29.26	743.2	29.73	755.2	85.3	29.6	77	E	.....	.....	.....	.....	8	NE	S	0	0	D. clouds	
Bombay	29.67	753.7	29.71	754.6	83.7	28.7	86	SSW	15	6.7	.....	.....	10	.....	SW	0.01	0.3	Overcast	
Poona	27.72	704.1	29.70	754.3	82.3	27.9	79	S	.....	.....	.....	.....	10	.....	S	0.10	2.5	Threatening	
Lahore	28.88	733.4	29.59	751.6	95.7	35.4	47	SW	1	0.4	.....	.....	0	.....	.....	0	0	Blue sky	
Belgaum	27.23	691.6	29.76	755.9	75.2	24.0	91	SSW	3	1.3	.....	.....	5	E	SSW	0.07	1.8	D. clouds	
Roorkee	28.72	729.4	29.60	751.8	85.8	29.9	78	SE	2	0.9	.....	.....	6	.....	.....	0	0	.....	
Agra	29.07	738.3	29.62	752.2	92.6	33.7	58	NW	.....	.....	.....	.....	8	.....	NW	0	0	.....	
Nagpur	28.67	728.3	29.70	754.4	85.4	29.7	71	Calm	3.2	1.4	.....	.....	9	.....	SE	0	0	D. clouds	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.32	744.8	29.63	752.6	87.8	31.0	82	Calm	1.9	0.8	.....	.....	2	.....	.....	0	0	D. clouds	
Patna	29.47	748.6	29.65	753.1	86.8	30.4	82	Calm	0.7	0.3	.....	.....	10	.....	.....	0	0	Overcast	
Hazaribagh	27.68	703.2	29.67	753.7	81.6	27.6	83	WSW	6.8	3.0	.....	.....	10	.....	.....	0.05	1.3	Thunder-storm	
Cuttack	29.61	752.2	29.70	754.2	87.9	31.1	69	SSW	4	1.8	.....	.....	3	.....	.....	0	0	D. clouds	
Calcutta (Alipore)	29.68	753.8	29.70	754.3	84.2	29.0	90	S	0.5	0.2	.....	.....	4	SSW	SSW	0	0	D. clouds	
Goalpara	29.33	744.9	29.72	754.8	78.8	26.0	87	S	2.3	1.0	.....	.....	9	.....	.....	2.50	63.5	Gloomy	
Chittagong	29.67	753.6	29.76	755.9	79.9	26.6	91	Calm	4.3	1.9	.....	.....	9	.....	.....	0	0	Misty	
Sibsagar	29.35	745.5	29.68	754.0	84.2	29.0	79	SSE	2.4	1.1	.....	.....	10	W	W	0	0	D. clouds	
Jubbulpore	28.33	719.5	29.69	754.0	78.8	26.0	87	NNW	4.2	1.9	.....	.....	10	.....	.....	0.05	1.3	Overcast	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.68	753.8	30.07	763.8	76.3	24.6	39	Calm	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.96	761 0	30.07	763.7	77.9	25.5	33	NE	7.4	3.3	.....	.....	1	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.87	758.8	30.06	763.5	77.9	25.5	32	E	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.76	730.5	30.03	762.7	77.4	25.2	43	SW	.....	.....	2	.....	0	.....	.....	0.039	1.0	.....	Prof. Trionfini Carlo.
Milan	29.56	750.8	30.07	763 6	77.4	25.2	56	N	.....	.....	2	.....	1	E	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.18	741.2	30.06	763.4	79.3	26.3	25	SSW	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28 21	716.4	30.05	763.3	73.8	23.2	26	W	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.80	757.0	30.02	762.4	77.4	25.2	45	E	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.86	758.5	30.03	762.7	80.8	27.1	32	N	.....	.....	4	.....	0	.....	.....	0.012	0.3	.....	Prof. G. M. Garibaldi.
Parma	29.73	755.1	30.04	763.0	76.1	24.5	40	SE	.....	.....	2	.....	0	.....	.....	0.098	2.5	.....	Prof. P. Pigorini.
Florence	29.73	755.1	29.98	761.4	77.5	25.3	31	NE	.....	.....	8	.....	3	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.87	758 7	29.95	760.8	79.2	26.2	34	ENE	19.2	8.6	.....	.....	2	ENE	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.95	760.7	30.00	761.9	72.5	22.5	61	NE	.....	.....	.....	.....	10	.....	.....	0.669	17.0	.....	Prof. Luigi Guidi.
Urbino	28.48	723.3	29.98	761.6	65.5	18.6	62	NNE	.....	.....	8	.....	10	.....	.....	0.539	13.7	.....	Prof. P. Serpieri.
Rome	29.61	752 2	29.78	756.5	75.9	24.4	56	N	18.1	8.1	.....	.....	10	.....	.....	0.028	0.7	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.59	751.6	29.78	756.5	75.2	24.0	46	ENE	.....	.....	2	.....	9	SE	.....	0.024	0.6	.....	Prof. L. Palmieri.
Lecce	29.45	748.1	29.70	754.3	81.7	27.6	46	N	27.3	12.2	.....	.....	7	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.67	753.7	29.86	758.4	81.9	27.7	31	NW	.....	.....	6	.....	9	NE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	28.87	733.3	29.76	755.9	80.4	26.9	75	SW	1 8	0.8	.....	.....	10	.....	.....	0.693	17.6	.....	Prof. F. D. Conti.
Palermo	29.55	750.6	29.80	756.9	75.2	24.0	61	W	5.6	2.5	.....	.....	9	.....	.....	0.504	12.8	.....	Prof. G. Cacciatore.
Syracuse	29.61	752.0	29.68	753.9	79.3	26.3	70	SW	7.4	3.3	.....	.....	5	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.25	743.0	29.81	757.1	72.5	22.5	63	NNW	0	0	.....	.....	9	NW	.....	0.118	3.0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.53	750.0	29.73	755.1	75.9	24.4	86	NNW	4.1	1.8	.....	.....	9ks;s	.....	NNW	0	0	Cloudy	
Tokei (Yeddo) Observatory	29.79	756.6	29.86	758.4	68.4	20.2	91	NE	4.9	2.2	.....	.....	10s	.....	.....	1.460	37.08	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	29.76	755.9	29.85	758.3	69.2	20.7	96	N	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Cuernavaca	.....	.....	.....	.....	65.4	18.6	75	N	.....	.....	1	9ck	0	E	.....	0.709	18.0	Cloudy	P. Ceballos.
Guadalajara	25.08	637.1	30.03	762.8	60.4	15.8	89	N	.....	.....	1	0	8ks	.....	E	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	23.72	602.7	29.87	758.8	63.3	17.4	74	Calm	.....	.....	.....	4	0	.....	.....	0	0	⅓ cloudy	F. Ortiz.
Leon	24.46	621.3	30.01	762.2	61.9	16.6	88	NE	.....	.....	1	0	0	.....	.....	Inap.	Inap.	Clear	Prof. M. Leal.
Mexico	23.13	587.6	30.14	765.6	54.5	12.5	90	Calm	0	0	.....	3c	2ks	.....	.....	0.02	0.4	⅓ cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	60.4	15.8	91	Calm	.....	.....	0	0	1s	.....	.....	Inap	Inap.	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.29	7.25	.....	Prof. B. Gonzalez.
Tlacotalpam	29.92	759.9	29.93	760.2	78.8	26	91	S	.....	.....	1	10cs	5k	.....	S	Inap	Inap.	Threatening	M, M. Cházaro.
San Luis Potosi	24.21	614.1	30.06	763.4	63.0	17.2	40	ESE	3.1	0.4	.....	0	3	.....	ESE	0	0	Clear	G. Barroeta, M. D.
Vera-Cruz	29.95	760.6	29.98	761.3	78.8	26.0	80	NNW	3.4	1.5	.....	3ck	5ks	.....	.....	0.039	1.0	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	53.6	12	74	NE	.....	.....	2	1	2	SW	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.4	30.00	762.0	50.7	10.4	82	NE	0	0	.....	2	0	Calm	.....	0.350	8.9	.....	Prof. P. Spina, [M.M.D.D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.38	720.7	30.00	762.1	78.1	25.6	82	SE	0.8	0.4	.....	0	2	.....	S	0.252	6.4	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.32	770.0	30.32	770.0	68.0	20.0	.....	W	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.21	767.2	30.26	768.6	65.7	18.7	.....	WSW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.23	767.9	30.23	767.9	65.1	18.4	.....	SW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.30	769.5	30.30	769.5	66.6	19.2	80	WSW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.26	768.6	30.31	769.8	68.4	20.2	68	SSW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.85	758.2	29.91	759.6	58 3	14.6	83	SSE	20.8	9.3	.....	.....	8	.....	.....	0.157	4.0	Rain & fog...	
Brŏno	29.86	758.4	29.90	759.4	52.5	11.4	77	Calm	0	0	.....	.....	7	.....	.....	0	0	.....	
Christiania	29.78	756.4	29.92	760.0	66.2	19.0	78	W	7	3	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.82	757.4	29.86	758.5	49.3	9.6	69	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.92	759.9	30.11	764.7	69.8	21.0	76	NNE	11.2	5.0	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.92	734.6	29.89	759.1	87.8	31.0	37	SW	4.9	2.2	.....	.....	10	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.82	757.4	29.91	759.6	77.4	25.2	66	SW	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.57	751.1	29.93	760.1	70.2	21.2	88	SE	6.3	2.8	.....	.....	0	.....	.....	0.252	6.4	.....	The Staff.
Ponta Delgada, (Azores)	30.00	762.1	30.08	763.9	69.8	21.0	87	NNE	19.2	8.6	.....	.....	2	.....	.....	0.327	8.3	.....	

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

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 00′, W. 23° 45′	.....	.....	30.03	762.7	73.6	23.1	.....	NE	.....	.....	3	.....	8	.....	NE	2	.....	D. clouds	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	30.04	762.9	67.6	19.8	.. ....	WSW	.....	.....	2	.....	3	.....	WSW	2	W	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.95	760.8	84.2	29.0	.....	NW	.....	.....	2	.....	8	.....	.....	2	NW	D. clouds	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.97	761.2	80.1	26.7	.....	W	.....	.....	2	.....	7	.....	W	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.84	757.9	86.9	30.5	.....	SW	.....	.....	1	.....	3	.....	SW	0	.....	D. clouds	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.70	754.4	30.11	764.9	67.3	19.6	67	WNW	7	3	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.61	752.0	30.02	762.4	65.3	18.5	70	W	2	1	.....	.....	4	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.62	752.4	29.86	758.4	63.9	17.7	77	WNW	7	3	.....	.....	8k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.73	755.1	29.74	755.5	63.7	17.6	79	NW	13	6	.....	.....	7ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.30	744.3	29.93	760.2	62.4	16.9	100	N	9	4	.....	.....	10sk;n	.....	.....	.....	.....	Raining.....	Physical Cabinet.
Nikolaiev	29.92	759.9	29.99	761.7	83.8	28.8	57	WSW	4	2	.....	.....	5cs	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.97	761.3	29.99	761.8	82.9	28.3	63	N	7	3	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.36	745.7	29.89	759 3	62.1	16.7	86	SSW	7	3	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.72	754.9	29.91	759.8	84.7	29.3	42	SSW	4	2	.....	.....	6ck	.....	.....	.....	.....	.....	Meteorological Obs
Archangel	29.47	748.4	29.48	748.9	59.7	15.4	86	E	9	4	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.70	728.9	30.05	763.3	80.6	27.0	42	SE	9	4	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.21	767.2	30.12	765.1	79.3	26.3	47	SE	7	3	.....	.....	1c	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.45	747.9	29.91	759.7	64.2	17.9	86	SSE	0	0	.....	.....	8k	.....	.....	.....	.....	Raining.....	Cand. Fatjanow.
Kasan	29.65	753.0	29.91	759.6	68.0	20.0	76	S	11	5	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	29.13	739.9	30.06	763.4	62.8	17.1	60	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.85	758.1	30.07	763.8	76.1	24.5	38	WNW	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.42	721.9	30.07	763.8	72.7	22.6	59	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.56	750.8	30.08	763.9	54.9	12.7	95	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.62	752.4	29.91	758.7	52.9	11.6	92	N	2	1	.....	.....	6	.....	.....	.....	.....	Raining.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.75	755.6	29.89	759.2	79.0	26.1	82	Calm	0	0	.....	.....	2cs	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y	30.01	762.2	30.11	764.8	79.9	26.6	64	SE	1.1	0.50	.....	.....	6	.....	.....	0.021	0.53	.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	29.93	760.1	29.98	761.5	86.2	30.1	48	SE	2.6	1.15	.....	2	.....	SW	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.11	688.7	.....	.....	82.4	28.0	58	NE	8.2	3.68	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.82	706.5	29.90	759.4	88.7	31.5	40	NE	8.9	4.00	.....	2	2	.....	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	29.92	760.0	30.07	763.7	82.4	28.0	64	ENE	4.6	2.08	.....	4	6	WNW	.....	Inap.	Inap.	Light mist...	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.98	736.1	29.83	757.7	80.8	27.1	50	SW	1.6	0.72	.....	10	0	.....	.....	0	0	Covered.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.95	760.7	30.01	762.4	81.0	27.2	87	E	3.8	1.7	.....	6c	1k	S	.....	0	0	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.81	757.2	29.91	759.6	78.4	25.8	69	SE	44.7	20.0	.....	10	10	.....	SE	0.097	0.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.86	758.4	29.95	760.7	82.4	28.0	85	SE	11.4	5.10	.....	7kn	6kn	SE	SE	0.482	12.25	Cloudy.....	Leonardo de Tejeda, Ch'f Eng'r.

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount.		Clouds. Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
Haparanda	29.73	755.1	29.77	756.1	61.5	16.4	.....	N	.....	.....	2	.....	6	.....	.....	0.591	15.0	.....	
Umea	29.79	756 7	29.84	758.0	66.6	19.2	58	NW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	29.85	758.1	29.90	759.4	66.2	19 0	46	W	.....	.....	2	.....	4	.....	.....	0	0	.....	
Stockholm	29.80	757.0	29.98	761.5	64.8	18.2	78	W	.....	.....	2	.....	3	.....	.....	0.008	0.2	.....	
Wisby	29.91	759.7	29.97	761.2	64.0	17.8	87	NW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.88	758.9	29.95	760.8	65.7	18.7	58	W	6.7	3.0	.....	.....	7	N	.....	0.002	0.06	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.77	730.8	30.16	766.1	66.2	19.0	64	NNE	.....	.....	7	.....	3	.....	.....	0	0	Cloudy.....	The Observatory.
Zurich	28.66	728.0	30.26	768.5	66.9	19.4	61	N	.....	.....	2	.....	3	.....	.....	0	0	Bright.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.4 mm.; Thermometer, —0.8 cent.; Relative Humidity, +5 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	29.82	757.5	78.1	25.6	51	ENE	16	7.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	29.84	757.9	82.0	27.8	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.58	751.3	29.69	754.2	83.0	31.1	64	W	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

CANADIAN SERIES.

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

Bathurst, N. B	30.07	763.8	30.14	765.5	61.9	16.6	97	SE	4	1.8	.....	.....	10n	.....	.....	0	0	Cloudy.....	Hon. J. Ferguson.
Brockville, Ontario	29.69	754.1	29.98	761.5	68	20.0	.....	S	1	0.4	.....	.....	8s	.....	S	0	0	Cloudy.....	W. R. Bigg.
*Chatham, N B	30.05	763.3	30.11	764.8	57	13.9	97	NE	4	1.8	.....	.....	10s	.....	NE	0.10	2.5	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island	30.01	762.2	30.05	763.3	59	15.0	93	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.69	754.1	29.88	758.9	67.8	19.6	97	E	.....	.....	2	.....	10s	.....	.....	0	0	Foggy.....	James Smith, M. A.
Dalhousie, N. B	29.98	761.5	30.14	765.5	58.3	14.6	88	E	.....	.....	2	.....	.....	.....	.....	0	0	Overcast.....	H. A. Johnson.
Esquimault, B. C	30.24	768.1	30.29	769.4	49.3	9.6	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	30.09	764.3	30.11	764.8	51	10.6	93	NE	24	10.7	.....	.....	Fog	.....	NE	0	0	Foggy	J. McWilliams.
Fredericton, N. B	30.02	762.5	30.08	764.0	61.0	16.1	89	NE	6	2.7	.....	.....	10n	.....	.....	0.246	6.25	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.15	740.4	29.96	761.0	56	13.3	98	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	James Stewart.
Granton, Ontario	28.86	733.0	29.93	760.2	61	16.1	100	E	.....	.....	1	.....	10n	.....	.....	0.76	19.3	Overcast	James Grant.
*Halifax, N. S	29.82	757.4	29.95	760.7	64	17.8	96	E	3	1.3	.....	.....	Fog	.....	.....	0.116	2.94	Light rain..	F. Allison, M. A.
Hamilton, Ontario	29.61	752.1	29.97	761.2	66.9	19.4	85	SW	.....	.....	2	0	8ks	.....	.....	0	0	Overcast.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.12	765.0	30.14	765.5	50	10.0	93	NE	.....	.....	2	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.65	753.1	29.97	761.2	69	20.6	92	E	6	2.7	.....	8c	Sm'e	Calm	E	0	0	Fair.....	S. Woods, M. A.
Little Glace Bay, N. S	30.01	762.2	30.05	763.3	59.4	15.2	95	SE	6	2.7	.....	0	0	.....	.....	0	0	Fog & mist..	C. H. Rigby.
*Montreal, Quebec	29.83	757.7	30.02	762.5	66	18.9	91	N	5	2.2	.....	.....	10s	.....	.....	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.27	743.4	29.94	760.5	65	18.3	99	E	5	2.2	.....	.....	Fog	.....	E	0.23	5.8	Foggy	Rev. R. Mosley.
Peterboro, Ontario	29.22	742.2	29.94	760.5	67.9	19.9	92	Calm	.....	.....	0	0	0	.....	.....	0	0	Hazy.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.95	760.7	65	18.3	95	Calm	0	0	.....	.....	10n	.....	SW	0.04	1.0	Threatening	H. Morgan.
Port Hastings, N. S	29.98	761.5	30.02	762.5	62.6	17.0	.....	SW	2	0.9	.....	.....	.....	.....	.....	0	0	Cloudy.....	Peter Grant.
Port Stanley, Ontario	29.29	744.0	29.91	759.7	69	20.6	89	SW	10	4.5	.....	.....	8ks	.....	SW	0.47	11.9	Cloudy.....	M. Payne.
*Quebec, Quebec	29.76	755.9	30.08	764.0	59	15.0	88	E	.....	.....	6	.....	10n	.....	E	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.55	750.6	30.00	762.0	62	16.7	98	NW	3	1.3	.....	.....	Fog	.....	NW	0.48	12.2	Foggy.....	W. H. McIntyre.
St. Andrews, N. B	29.95	760.7	30.00	762.0	64	17.8	96	NE	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	29.84	757.9	30.00	762.0	64	17.8	94	NE	8	3.6	.....	.....	10n	.....	.....	0.08	2.0	Light rain...	G. Murdock, C. E.
*Saugeen, Ontario	29.25	742.9	29.94	760.5	62	16.7	92	E	3	1.3	.....	5k	5ks	.....	.....	1.08	27.4	Cloudy.....	K. Stewart.
Stayner, Ontario	29.19	741.4	29.94	760.5	62	16.7	97	Calm	0	0	.....	.....	10n	.....	SE	0.22	5.6	Light rain...	R. J. Cole.
Stratford, Ontario	28.67	728.2	29.91	759.7	62.6	17.0	94	SE	5	2.2	.....	0	10s	.....	.....	0.548	13.92	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.02	762.5	30.05	763.3	69	15.6	96	E	1	0.4	.....	.....	10n	.....	.....	0	0	Threatening	T. C. Hill.
*Toronto, Ontario	29.58	751.3	29.95	760.7	68	20.0	91	Calm	0	0	.....	5cs	5s	W	Calm	0	0	Fair.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	50.0	10.0	79	NE	.....	.....	.....	.....	10	.....	.....	0	0	Overcast.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

UNITED STATES SERIES.

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.79	756.7	30.00	762.0	68	20.0	92	W	1	0.4	.....	2c	Fog	W	Calm	0.16	2.5	Fair	
Alpena, Michigan	29.32	744.7	29.94	760.5	65	18.3	94	NE	3	1.3	.....	.....	10s	.....	NE	1.77	45.0	Cloudy	
Atlantic City, New Jersey	29.98	761.5	30.00	762.0	74	23.3	95	S	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Augusta, Georgia	29.90	759.4	30.08	764.0	75	23.9	90	Calm	0	0	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Baltimore, Maryland	29.94	760.5	29.99	761.7	76	24.4	86	W	1	0.4	.....	5k	Fog	SW	Calm	0	0	Foggy	
Barnegat, New Jersey	29.99	761.7	30.01	762.2	74	23.3	90	S	6	2.7	.....	5c	5s	S	S	0	0	Cloudy	
Bismarck, Dakota	28.06	712.7	29.91	759.7	59	15.0	82	E	10	4.5	.....	Haze	Haze	.....	.....	0	0	Hazy	
Boerne, Texas	28.59	726.2	29.87	758.7	71	21.7	85	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.20	690.9	30.16	766.1	56	13.3	74	N	12	5.4	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Boston, Massachusetts	29.87	758.7	30.02	762.5	68	20.0	90	E	2	0.9	.....	.....	Fog	.....	E	0.83	21.1	Dense fog	
Brackettville, Texas	28.88	733.5	29.87	758.7	73	22.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.98	736.1	29.95	760.7	58	14.4	94	SE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	29.87	758.7	29.93	760.2	78	25.6	86	W	10	4.5	.....	.....	10s	.....	W	0.03	0.8	Cloudy	
Buffalo, New York	29.27	743.4	29.93	760.2	69	20.6	85	NW	2	0.9	.....	2c	0	Calm	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.79	756.7	30.04	763.0	68	20.0	94	Calm	0	0	.....	0	5s	.....	S	0.10	2.5	Fair	
Cairo, Illinois	29.57	751.1	29.94	760.5	78	25.6	82	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	65	18.3	83	Calm	.....	.....	0	.....	10s	.....	Calm	Blank	Blank	Cloudy	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	68	20.0	60	NE	.....	.....	1	.....	10s	.....	NE	0	0	Cloudy	
Camp Verde, Arizona	26.76	679.7	30.24	768.1	69	20.6	80	S	.....	.....	1	.....	10n	.....	Calm	0.17	4.3	Light rain	
Campo, California	27.38	695.4	29.95	760.7	53	11.7	86	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.06	763.5	30.06	763.5	81	27.2	87	SW	7	3.1	.....	5k	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	29.99	761.7	30.01	762.2	75	23.9	90	SW	5	2.2	.....	.....	10s	.....	SW	0.41	10.4	Cloudy	
Cape Lookout, N. Carolina	30.05	763.3	30.07	763.8	81	27.2	78	W	14	6.3	.....	5c	0	W	.....	0.12	3.0	Fair	
Cape May, New Jersey	29.99	761.7	30.01	762.2	76	24.4	90	SE	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Castroville, Texas	29.22	742.2	29.90	759.4	73	22.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.04	763.0	30.10	764.5	82	27.8	79	Calm	0	0	.....	2cs	5s	W	SW	0.87	22.1	Fair	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	48	8.9	63	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.29	744.0	29.96	761.0	66	18.9	84	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.31	744.5	29.93	760.2	72	22.2	80	W	2	0.9	.....	1k	Fog	W	Calm	0.27	6.9	Clear	
Cleveland, Ohio	29.23	742.4	29.93	760.2	65	18.3	84	SE	5	2.2	.....	5ck	0	W	.....	1.44	36.6	Fair	
Coleman City, Texas	28.25	717.5	29.88	758.9	65	18.3	78	W	4	1.8	.....	2c	0	N	.....	0	0	Fair	
Columbus, Ohio	29.12	739.6	29.92	760.0	67	19.4	90	SE	2	0.9	.....	2c	Haze	Calm	Calm	0.05	1.3	Fair	
Concho, Texas	28.13	714.5	29.76	755.9	65	18.3	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.59	751.6	30.04	763.0	71	21.7	90	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.42	747.3	30.04	763.0	63	17.2	83	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.89	733.8	30.01	762.2	77	25.0	77	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.26	743.2	30.02	762.5	75	23.9	77	SW	2	1.3	.....	2c	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.82	630.4	30.04	763.0	59	15.0	54	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.02	762.5	68	20.0	65	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Detroit, Michigan	29.24	742.7	29.88	758.9	65	18.3	89	Calm	0	0	.....	0	8s	.....	Calm	0.98	24.9	Fair	
Dodge City, Kansas	27.44	697.0	29.63	752.6	70	21.1	70	S	16	7.2	.....	2k	0	W	.....	0	0	Fair	
Dubuque, Iowa	29.36	745.7	30.05	763.3	60	15.6	77	N	1	0.4	.....	5c	Fog	NW	Calm	0	0	Cloudy	
Duluth, Minnesota	29.42	747.3	30.08	764.0	63	17.2	89	Calm	0	0	.....	.....	10s	.....	E	0	0	Cloudy	
Eagle Pass, Texas	29.26	743.2	29.98	761.5	72	22.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.94	760.5	30.00	762.0	60	15.6	100	N	8	3.6	.....	.....	10n;fg	.....	Calm	0.03	0.8	Light rain	
Edinburg, Texas	.....	.....	.....	.....	75	23.9	95	N	.....	.....	1	.....	5s	.....	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	78	25.6	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.23	742.4	29.91	759.7	68	20.0	84	S	8	3.6	.....	2k	5s	W	Calm	0.44	11.2	Cloudy	
Escanaba, Michigan	29.39	746.5	30.03	762.7	62	16.7	83	N	12	5.4	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
Florence, Arizona	28.42	721.9	30.02	762.5	75	23.9	77	Calm	.....	.....	0	.....	10s	.....	W	0.15	3.8	Cloudy	
Fort Craig, New Mexico	25.58	649.7	29.64	752.8	66	18.9	78	Calm	0	0	.....	8cs	0	SW	.....	0	0	Cloudy	
Fort Davis, Texas	25.28	642.1	30.24	768.1	67	19.4	68	NW	4	1.8	.....	5k	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.49	749.0	30.01	762.2	72	22.2	80	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Fort Griffin, Texas	28.77	730.7	30.01	762.2	66	18.9	79	Calm	0	0	.....	5cs	0	N	.....	0	0	Fair	
Fort McKavett, Texas	27.81	706.4	29.64	752.8	75	23.9	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.84	732.5	29.92	760.0	67	19.4	79	Calm	0	0	.....	0	2s	.....	Calm	0	0	Fair	
Fredericksburg, Texas	28.30	718.8	29.82	757.4	72	22.2	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.95	760.7	30.00	762.0	81	27.2	78	E	9	4.0	.....	.....	10ks	.....	E	0.29	7.4	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.35	745.0	29.96	761.0	65	18.3	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.24	742.7	30.00	762.0	66	18.9	79	W	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Indianola, Texas	29.96	761.0	29.99	761.7	80	26.7	82	E	22	9.8	.....	.....	10s	.....	E	0.07	1.8	Cloudy	
Jacksboro, Texas	28.90	734.0	29.99	761.7	72	22.2	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.05	763.3	30.07	763.8	80	26.7	82	SE	2	0.9	.....	5k	0	Calm	.....	0.35	8.9	Fair	
Keokuk, Iowa	29.40	746.7	29.99	761.7	67	19.4	74	NW	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Key West, Florida	30.00	762.0	30.03	762.7	84	28.9	79	E	5	2.2	.....	3c;k	1ks	Calm;E	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.01	762.2	30.04	763.0	75	23.9	95	W	2	0.9	.....	5cs	2s	N	W	0.28	7.1	Fair	
Knoxville, Tennessee	29.08	738.6	30.05	763.3	66	18.9	95	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
La Crosse, Wisconsin	29.33	745.0	30.05	763.3	60	15.6	88	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	63	17.2	72	N	1	0.4	.....	5ck	0	Calm	.....	0	0	Fair	
Laredo, Texas	29.55	750.6	29.88	758.9	73	22.8	90	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.80	629.9	30.07	763.8	58	14.4	58	S	1	0.4	.....	2ck	0	S	.....	0	0	Fair	
Leavenworth, Kansas	29.18	741.2	30.00	762.0	64	17.8	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.62	752.3	29.95	760.7	64	17.8	86	E	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.44	747.8	29.97	761.2	74	23.3	76	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.36	745.7	30.02	762.5	74	23.3	81	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.36	745.7	30.04	763.0	62	16.7	77	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Mason, Texas	28.41	721.6	30.08	764.0	79	26.1	58	E	1	0.4	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.72	754.9	30.02	762.5	77	25.0	76	SW	3	1.3	.....	8k	Haze	SW	Calm	0	0	Fair	
Milwaukee, Wisconsin	29.31	744.5	30.02	762.5	61	16.1	88	NW	6	2.7	.....	.....	9ks	.....	NE	0.02	0.5	Cloudy	
Mobile, Alabama	30.03	762.7	30.08	764.0	77	25.0	87	SW	4	1.8	.....	2ck	8s	W	W	0.21	5.3	Cloudy	
Montgomery, Alabama	29.85	758.2	30.08	764.0	76	24.4	81	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.98	736.1	29.98	761.5	75	23.9	77	E	7	3.1	.....	.....	10s	.....	SE	0.39	9.9	Cloudy	
Mt. Washington, N. H.	24.00	609.6	30.36	771.1	49	9.4	93	NE	10	4.5	.....	2k	5ks	NE	NE	0.31	7.9	Fair	
Nashville, Tennessee	29.52	749.8	30.03	762.7	74	23.3	76	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.89	759.2	30.00	762.0	75	23.9	77	SW	1	0.4	.....	5c	0	Calm	.....	0	0	Fair	
New London, Connecticut	29.96	761.0	30.01	762.2	75	23.9	86	Calm	0	0	.....	2cs	2s;fg	W	N	0	0	Fair	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	79	26.1	78	Calm	0	0	.....	10k	0	Calm	.....	0	0	Cloudy	
Newport, Rhode Island	29.96	761.0	30.00	762.0	72	22.2	90	SW	1	0.4	.....	9c;cs	0	SW	.....	0	0	Cloudy	
New York, New York	29.84	757.9	30.01	762.2	77	25.0	76	Calm	0	0	.....	5cs	0	SW	.....	Inap.	Inap.	Fair	
Norfolk, Virginia	30.00	762.0	30.05	763.3	77	25.0	91	S	1	0.4	.....	.....	10s	.....	SW	0.24	6.1	Cloudy	
North Platte, Nebraska	27.10	688.3	29.58	751.3	62	16.7	72	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.26	768.6	30.3	769.6	45	7.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.18	4.6	Dense fog	
Omaha, Nebraska	28.93	734.8	29.97	761.2	64	17.8	78	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Oswego, New York	29.67	753.6	29.98	761.5	70	21.1	90	S	7	3.1	.....	5c	0	W	.....	0.45	11.4	Fair	
Pembina, Dakota	29.14	740.1	29.96	761.0	53	11.7	93	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.97	761.2	30.02	762.5	75	23.9	86	SW	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.74	730.0	.....	.....	75	23.9	86	Calm	.....	.....	0	0	5s	.....	SW	0.02	0.5	Fair	
Pike's Peak, Colorado	18.04	457.3	30.25	768.3	32	0.0	40	SW	4	1.8	.....	0	0	.....	.....	0.13	3.3	Clear	
Pioche, Nevada	24.05	611.0	29.86	758.4	57	13.9	87	S	8	3.6	.....	0	0	.....	.....	0.06	1.5	Clear	
Pittsburg, Pennsylvania	29.19	741.4	29.98	761.5	65	18.3	89	SE	7	3.1	.....	.....	10n	.....	S	0.46	11.7	Light rain	
Port Huron, Michigan	29.23	742.4	29.87	758.7	66	18.9	89	SE	6	2.7	.....	.....	10s	.....	Calm	0.49	12.4	Cloudy	
Portland, Maine	29.96	761.0	30.01	762.2	69	20.6	95	Calm	0	0	.....	2k	Fog	Calm	N	Inap.	Inap.	Foggy	
Portland, Oregon	30.27	768.8	30.38	771.6	49	9.4	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Prescott, Arizona	24.82	630.4	30.18	766.6	64	17.8	89	E	2	0.9	.....	.....	10n	.....	Calm	0.11	2.8	Light rain	
Pilot Point, Texas	29.26	743.2	30.06	763.5	75	23.9	72	SE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.05	763.3	30.06	763.5	80	26.7	82	E	5	2.2	.....	5c	0	NE	.....	0	0	Fair	
Red Bluff, California	29.62	752.3	29.96	761.0	71	21.7	33	N	22	9.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.79	756.7	30.00	762.0	80	26.7	66	NE	5	2.2	.....	1k	0	Calm	.....	0.02	0.5	Clear	
Rochester, New York	29.34	745.2	29.92	760.0	70	21.1	80	SW	3	1.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Roseburg, Oregon	29.76	755.9	30.34	770.6	48.5	9.2	85	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Sacramento, California	29.83	757.7	29.91	759.7	60	15.6	77	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.47	748.5	30.02	762.5	70	21.1	61	N	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	30.04	763.0	30.06	763.5	75	23.9	95	N	2	0.9	.....	2ck	0	Calm	.....	0.06	1.5	Fair	
St. Paul, Minnesota	29.21	741.9	30.02	762.5	59	15.0	87	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	66	18.9	79	Calm	0	0	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
San Antonio, Texas	29.32	744.7	29.88	758.9	71	21.7	90	NE	3	1.3	.....	0	0	.....	.....	0.06	1.5	Clear	
San Diego, California	29.86	758.4	29.93	760.2	63	17.2	100	SW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.27	743.4	29.92	760.0	66	18.9	89	SW	8	3.6	.....	10k	0	W	.....	1.46	37.1	Cloudy	
Sandy Hook, New Jersey	29.99	761.7	30.02	762.5	75	23.9	90	NW	1	0.4	.....	8cs	Haze	NW	Calm	0	0	Cloudy	
San Francisco, California	29.87	758.7	29.94	760.5	56	13.3	87	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	55	12.8	74	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Savannah, Georgia	30.00	762.0	30.09	764.3	81	27.2	87	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Shreveport, Louisiana	29.83	757.7	30.05	763.3	75	23.9	86	N	1	0.4	.....	1c	0	Calm	.....	0	0	Clear	
Silver City, New Mexico	24.36	618.7	.....	.....	58	14.4	76	Calm	0	0	.....	0	5cs	.....	Calm	0.11	2.8	Fair	
Smithville, North Carolina	30.06	763.5	30.10	764.5	78	25.6	91	NW	2	0.9	.....	0	8s	.....	S	0.35	8.9	Cloudy	
Springfield, Massachusetts	29.89	759.2	30.01	762.2	75	23.9	77	N	1	0.4	.....	2cs	0	W	.....	0.10	2.5	Fair	
Stockton, Texas	27.00	685.8	30.00	762.0	68	20.0	38	Calm	0	0	.....	4k	0	E	.....	0	0	Fair	
Thatcher's Island, Mass.	29.98	761.5	30.03	762.7	64	17.8	100	Calm	0	0	.....	.....	Fog	.....	.....	0.04	1.0	Foggy	
Toledo, Ohio	29.24	742.7	29.89	759.2	66	18.9	89	S	4	1.8	.....	.....	10s	.....	SW	0.09	2.3	Cloudy	
Tucson, Arizona	27.27	692.6	29.82	757.4	75	23.9	76	SW	2	0.9	.....	5k	0	S	.....	0	0	Fair	
Tybee Island, Georgia	30.05	763.3	30.08	764.0	82	27.8	91	Calm	0	0	.....	.....	10ks	.....	S	0.74	18.8	Cloudy	
Umatilla, Oregon	29.87	758.7	.....	.....	54	12.2	80	NW	4	1.8	.....	0	8s	.....	NW	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	92	SW	.....	.....	2	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.10	739.1	29.88	758.9	76	24.4	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.20	617.0	29.77	756.1	60	15.6	55	NE	12	5.4	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Visalia, California	29.56	750.8	29.92	760.0	64	17.8	58	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.90	759.4	30.01	762.2	74	23.3	90	Calm	0	0	.....	2ck	Fog	Calm	Calm	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	77	25.0	82	SE	.....	.....	1	.....	10ks	.....	S	0	0	Cloudy	
Wilmington, N. Carolina	29.99	761.7	30.07	763.8	78	25.6	86	Calm	0	0	.....	8ck	2s	Calm	Calm	0.20	5.1	Cloudy	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	54	12.2	67	S	12	5.4	.....	0	2s	.....	Calm	0.07	1.8	Fair	
Wood's Holl, Mass.	29.96	761.0	30.01	762.2	70	21.1	90	S	4	1.8	.....	.....	10s;fg	.....	.....	0	0	Foggy	
Yankton, Dakota	28.73	729.7	29.98	761.5	62	16.7	77	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.66	753.4	29.82	757.4	82	27.8	70	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	30.02	762.5	30.08	764.0	36.0	2.2	95	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.00	762.0	30.02	762.5	84	28.9	83	E	1.2	0.5	.....	8c	0	E	.....	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.93	760.2	29.96	761.0	79	26.1	82	NE	7.2	3.2	.....	8cs	2s	SW	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	80	26.7	82	SE	11	4.9	.....	.....	8n	.....	.....	3.1	79.	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	82	27.8	91	Calm	0	0	.....	8c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	84	28.9	.....	S	18.8	8.4	.....	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	84	28.9	73	SE	.....	.....	2	0	0	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	67.0	19.4	82	Calm	0	0	.....	.....	10s;ks	.....	.....	0	0	.....	Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Mor gantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,856 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft.,or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 m.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.20	767.1	80	26.7	80	26.7	91	NE	4	1.8	.....	.....	2	.....	SW	0.70	17.8	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	30.01‡	762.2‡	.....	.....	67	19.4	95	SW	.....	.....	1	.....	10	.....	.....	0.1	3.	.....	.....	Foggy	
Naval Hospital, Yokohama, Japan	29.88*	758.9*	73.8	23.2	71.4	21.9	90	E	.....	.....	1	.....	10ks	.....	NE	0	0	.....	.....	Threatening	
Adams. S. 29° 22′, W. 171° 56′	30.50	774.7	63	17.2	59	15.0	100	SE	.....	.....	4	.....	2	.....	SSE	0	0	Mod'ate	SSE	Clear	
Alliance, Villafranca, France	30.05‡	763.3‡	.....	.....	77	25.0	69	SSW	.....	.....	0–1	.....	0	.....	.....	.....	.....	Light	S	Hazy	
Ashuelot, Yokohama, Japan	29.95	760.7	74	23.3	74	23.3	80	NE	.....	.....	4	.....	10	.....	E	.....	.....	Mod'ate	E	Cloudy	
Alaska. S. 53° 31′, W. 70° 50′	29.21	741.9	56	13.3	41	5.0	75	SSE	.....	.....	2	.....	8	.....	N	0.05	1.3	Smooth	.....	D. clouds	
Canonicus, New Orleans, La	30.05	763.3	68	14.4	80	26.7	96	E	.....	.....	3	.....	5	.....	.....	.....	.....	.....	.....	Fair	
Colorado, New York, N. Y.	30.03‡	762.7‡	.....	.....	76	24.4	86	NE	3	1.3	.....	.....	8	.....	W	0.01	0.3	.....	.....	Foggy	
Constitution, Havre, France	30.25‡	768.3‡	.....	.....	66	18.9	89	WSW	.....	.....	1	.....	2	.....	ENE	.....	.....	.....	.....	Clear	
Despatch, Constantinople, Turkey	29.84‡	757.9‡	.....	.....	73	22.8	85	NE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Franklin, Norfolk, Va.	30.15	765.8	78	25.6	76	24.4	100	SSW	5	2.2	.....	.....	8	.....	SSW	0.45	11.4	.....	.....	Cloudy	
Gettysburg Toulon, France	29.91‡	759.7‡	.....	.....	80	26.7	96	W	.....	.....	1–2	.....	2	.....	Calm	0	0	.....	.....	Fair	
Guard, Bahia, Brazil	30.19	766.8	77	25.0	77	25.0	77	SSW	.....	.....	3	.....	5	.....	SW	.....	.....	.....	.....	Fair	
Hartford, Rio de Janeiro, Brazil	30.01	762.2	.....	.....	76	24.4	60	N	7.5	3.4	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	
Marion, Leghorn, Italy	29.98	761.5	79	26 1	78	25.6	86	W	.....	.....	3	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	29.70	754.4	71	21.7	67	19.4	84	SSE	.....	.....	1	.....	8	.....	SSE	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.84‡	757.9‡	.....	.....	73	22.8	76	E	.....	.....	2	.....	10	.....	E	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.29†	769.4†	.....	.....	82	27.8	83	Calm	0	0	.....	.....	8	.....	SW	0	0	.....	.....	Fair	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	62	16.7	77	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.16	766.1	77	25.0	75	23.9	95	SW	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Palos, Tientsin, China	30.01	762.2	85	29.4	80	26.7	82	Calm	.....	.....	0	.....	10?	.....	.....	.....	.....	.....	.....	Clear?	
Plymouth. New York, N. Y.	30.12	765.0	76	24.4	75	23.9	86	NNE	.....	.....	1	.....	8	.....	W	.....	.....	.....	.....	Fair	
Ranger, Hong-Kong, China	29 96	761.0	87	30.6	87	30.6	83	SW	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.89	759.2	77	25.0	77	25 0	95	NW	.....	.....	3	.....	8	.....	NW	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	29.99‡	761.7‡	.....	.....	74	23.3	90	SW	.....	.....	1	.....	8	.....	W	0	0	.....	.....	Cloudy	
Saratoga, Off Block Island, R. I.	30 10*	764.5*	.....	.....	69	20.6	95	WSW	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	29.97	761.2	75	23.9	74	23.3	90	SW	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Misty	
Supply, Havre, France	30.39	771.9	66	18.9	68	20.0	74	NW	.....	.....	0–1	.....	5	.....	NW	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass.	30.01‡	762.2‡	.....	.....	66	18.9	100	E	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Trenton, Southampton, England.	30.25‡	768.3‡	.....	.....	68	20.0	79	SSE	.....	.....	0–1	.....	8	.....	S;E	0	0	.....	.....	Cloudy	
Tuscarora, La Paz, Mexico	29.70	754.4	74	23.3	74	23.3	86	S	.....	.....	2	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia, Villafranca, France	30.05‡	763.3‡	.....	.....	77	25.0	65	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.	
Wabash, Boston, Mass.	30.00‡	762.0‡	.....	.....	66	18.9	94	NE	2	0.9	.....	.....	10	.....	Calm	0.55	14.0	.....	.....	Foggy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, Esquimault, B. C.		30.35*	770.9*				Calm			0		3		Calm				Fair	Capt. Seabury.
S. S. City of Peking, N. 35° 25′, E. 145° 13′		29.85†	758.2†	76	24.4	91	NE	20	8.9			1		NE	Light	Mod'ate	NE	Blue sky	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.93†	760.2†	57	13.9	94	N			2		0			0			Hazy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.77*	756.1*	85	29.4	79	SW			3		ks		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 36° 31′, E. 150° 00′		29.79†	756.7†	80	26.7	96	S			4		cs		Var.	0	Smooth	SE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-Swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		29.99*	761.7*	76	24.4	95	Calm			0		10						Overcast	Captain Sargent.
S. S. Ohio, Liverpool		30.18	766.6	70	21.1	85	WNW			1		7		WNW	0			Dull	Captain Morrison.
S. S. Pennsylvania, N. 47° 33′, W. 44° 33′		29.89†	759.2†	61	16.1	100	N			4		9		N	Blank	Light	N	Cloudy	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 31′, W. 20° 02′		30.08*	764.0*				SW	15	6.7			0				Heavy	W	Hazy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Bombay Hook, Delaware		29.95	760.7	75	23.9	90	SW	4	1.8			Fog			0			Foggy	Capt. James Jorgen sen
Schooner Florence, Niantlic		30.09*	764 3*	44.5	6.9		SW			1	9c	1ks		W	0			Fair	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 4, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			29.97	761.3	71.6	22.0	84	SW			1		2			0	0	Fair	
Nemours			30.02	762.6	79.5	26.4	79	NNW			3		3			0	0	Pretty fair..	Kesxuche.
Algiers			30.01	762.2	84.9	29.4	52	NE			3		3			0	0	Pretty fair..	Touriliere.
La Calle			29.97	761.3	81.0	27.2	68	NNW			5		4			0	0	Cloudy	Foufrede.
Tunis			29.87	758.7	78.8	26.0	71	W			6		0			0.039	1.0	Clear	Jacques.
Sfax			29.96	760.9	86.0	30.0		WNW			5		2			0.039	1.0	Fair	Gau.
Saida			30.00	762.1	81.3	27.4	36	E			5		7			0	0	Very cloudy	Herbin.
Tebessa			29.95	760.8	73.8	23.2	45	N			8		4			0	0	Cloudy	Watrin.
Geriville			30.02	762.4	90.3	32.4	42	NNW			6		8			0	0	Very cloudy	Brugniaux.
Laghouat			30.08	764.1	88.7	31.5	18	Calm			0		2			0	0	Fair	Bertrand.
Biskra			30.01	762.2	93.2	34.0	22	SE			1		1			0	0	Very fair	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.65	753.1	30.18	766.6	73.2	22.9	56	NE			4		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.52	749.9	30.28	769.1	68.7	20.4	69	W			1		10			0	0		Dr. Wierzbiski
Eperies	29.35	745.5	30.21	767.2	70.0	21.1	56	N			1		5k;s		S	0	0		Julius Mikolik.
Gratz	29.10?	739.0?	30.32?	770.2?	67.8	19.9	69	S			2		0			0	0		Andreas Rospini.
Hermannstadt	28.69	728.8	30.13	765.3	73.6	23.1	67	SSE			1		5			0	0		Prof. A. Gottschling.
Krentmünster	28.85	732.8	30.17	766.2	65.1	18.4	69	E			4		0			0	0		Prof. C. Wagner
Lemberg	29.24	742.8	30.21	767.4	64.0	17.8	80	SW			2		8			0	0		Dr. T. Stanecki.
Pola	29.96	761.0	30.07	763.8	77.4	25.2	49	ENE			4		0			0	0		I.R.Hydrographic Office.
Szathmar	29.80	756.9	30.24	768.2	81.3?	27.4?	68	NW			1		3			0	0		Julius Csics, S. J.
Szegedin	29.88	758.9	30.15	765.9	69.4	20.8	71	Calm			0		7			0	0		Karl Stancel.
Trieste	30.04	762.9	30.14	765.5	74.5	23.6	42	ENE			4		0			0	0		P. Busin.
Vienna	29.55	750.6	30.25	768.4	69.1	20.6	58	Calm			0		0			0	0	Clear	I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

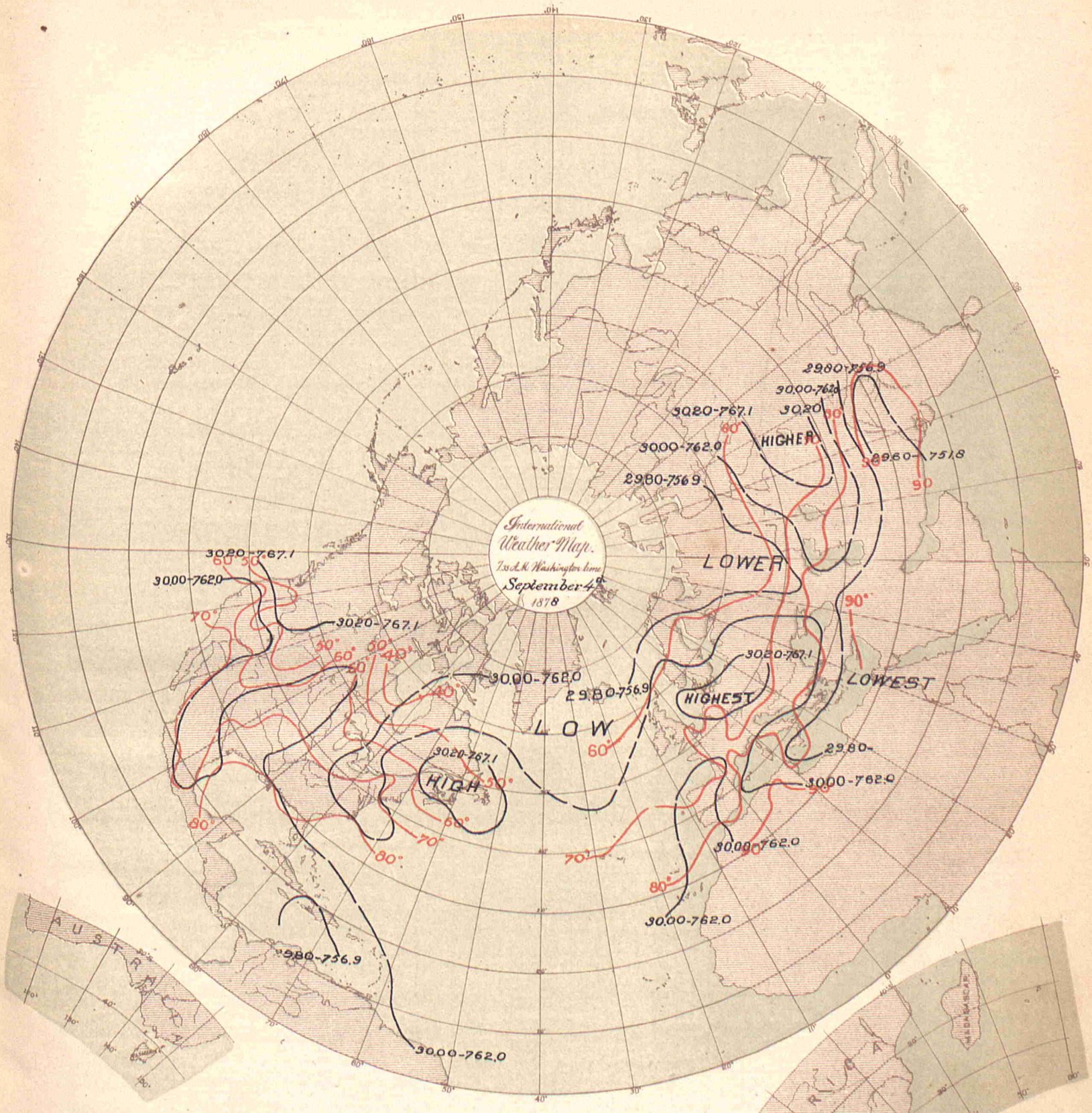
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.02	762.5	30.12	765.0	65.7	18.7		S	13	5.8			5			0	0	Blue sky	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	61	16.1		SSW			1		9					Raining	George Carrick.
Armagh, Observatory			30.10	764.5	66.9	19.4		SSE	6	2.7			10					Overcast	S. Carl.
Bidston, (Liverpool Obs.)			30.12	765.0	67.5	19.7		SE	10	4.5			8					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.75	755.6	30.14	765.5	67.6	19.8		NE			0		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	83	28.3		NE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.14	765.5	73.0	22.8		Calm			0		7					D. clouds	H. Todd. [H. C.
Cardington			30.16	766.1	73.0	22.8		SE			1		8					Overcast	John McLaren.
Chatham, School M. E.	30.02	762.5	30.15	765.8	68.2	20.1		NE			1		7					D. clouds	Lt. Cl. C. N. Martin, R. E.
Dartmoor	28.69	728.7	30.14	765.5	61.0	16.1		SW			2		4					Fine	Alexander Watt.
Donaghadee	30.10	764.5	30.13	765.3	62	16.7		S			2		8					D. clouds	J. Mac Gowan.
Dover	30.09	764.3	30.12	765.0	67	19.4		E			3		6					Hazy	J. Costello.
Eccles, (near Manchester)			30.13	765.3	69.5	20.8		S	0.6	0.3			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.83	757.7	30.06	763.5	63.5	17.5		ENE			3		10					Overcast	The Staff.
Fort Napier, (Natal)	27.65	702.3	29.96	761.0	74.0	23.3		E			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.73	755.1	29.96	761.0	82	27.8		SW			1		4					D. clouds	
Galway, Queen's College			30.01	762.2	67	19.4		WSW			2		8					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.01	762.2				NE			5		3					D. clouds	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.92	760.0	30.12	765.0	64.0	17.8		S			2		10					Raining	D. G. Maclean.
Great Yarmouth	30.18	766.6	30.19	766.8	65	18.3		SE			2		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.14	765.5	69.9	21.1		E			1		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.81	757.2	30.03	762.7	65	18.3		NE			2		7					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.06	763.5	67	19.4		E			6		3ck			0	0	Fine	M. P. Moyle.
Holyhead	30.05	763.3	30.10	764.5	63	17.2		NNE			3		8					D. clouds	John Tilston.
Jersey	29.76	755.9	30.05	763.3	66.6	19.2		E			3		10					Overcast	J. Fisher.
Kew, Observatory	30.10	764.5	30.13	765.3	70.1	21.2		ESE	8	3.6			8					Hazy	The Staff.
Kingstown	30.10	764.5	30.13	765.3	65	18.3		SE			3		5					D. clouds	George Mitchell.
Leicester, Museum			30.14	765.5	68.1	20.1		S			1		9					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.67	753.6	29.75	755.6	77	25.0		NW			1		5n?					Overcast?	Sergt. Beckett.
Nairn	30.01	762.2	30.08	764.0	70	21.1		SW			2		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	85.0	29.4		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.95	760.7	30.14	765.5	75.3	24.1		S			1		10k		SSW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.62	752.3	30.13	765.3	66.9	19.4		SSE			1		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.14	765.5	69	20.6		Calm			0		10					Overcast	H. E. Bellamy.
Plymouth	29.98	761.5	30.06	763.5	65.0	18.3		ENE			4		10					Overcast	John Merrifield.
Roche's Point	30.04	763.0	30.09	764.3	65	18.3		SE			3		8					Dull	W. Kennedy.
Saint Ann's Head	29.92	760.0	30.09	764.3	64	17.8		ESE			1		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys.)			30.09	764.3	61.9	16.6		WSW	7	3.1			4					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.94	760.5	85.4	29.7		NE			2		2					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.89	759.2	30.16	766.1	71.5	21.9		ESE			1		7			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.11	764.8	30.14	765.5	71.4	21.9	69	Calm			0		4			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.75	755.6	30.15	765.8	66.6	19.2		NE			0							Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.88	758.9	30.09	764.3	69.9	21.1		SE			1		8					Solar halo	Rev. C. H. Griffith, F. M. S.
Thurso			30.06	763.5	67	19.4		Calm			0		8					Overcast	John Trotter.
Truro, Royal Institution			30.08	764.0	70	21.1		E			4		8					Gloomy	W. Newcombe.
Valencia, Observatory			30.04	763.0	66.7	19.3		ESE	14	6.3			7					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			30.02	762.5	56.0	13.3	87	W			2		3k			0.36	9.1		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.76	755.9	29.95	760.8	74.9	23.8	58	NW	5.0	2.2		1	1			0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.22	767.6	30.31	769.9	44.8	7.1	86	ESE	6	2.7			4			0.03	0.8	Lunar halo	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

MARINE SERIES. VESSELS.	Corrected Inches	Corrected Millimeters	Reduced Inches	Reduced Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Upper	Clouds Lower	Direction Upper	Direction Lower	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 40° 50′, W. 67° 50′			30.06	763.5	63	17.2		E			1		10			3		Foggy	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 37° 40′, W. 17° 50′			30.06	763.5	72	22.9					1		8			0		D. clouds	Capt. D. W. A. Qualle
S. S. Peruvian																			Capt. W. H. Smith, R. N.
Schooner Traveller																			Capt. Alex. Simpson, [R.
Barque Virginia																			Capt. W. Spratly.

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 230 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26 24	666.5			64.8	18.2	90	SE			2	7cs				0.3	8.		Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.13	765.4	30.18	766.6	66.7	19.3	68	NW			2		2						
Fanöe	30.18	766.5	30.20	767.0	67.1	19.5	85	WSW			2		3						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.81	757.2	29.85	758.1	64.0	12.2	98	W			4		10						Rain and fog
Vestervig	30.01	762.2	30.18	766.5	64.8	18.2	88	WNW			2		4						

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

FRENCH SERIES.

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

Alençon, Normal School	29.54	750.2	30.09	764.2	69.8	21	75	NE			3		5			0	0	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	30.02	762.5	30.10	764.5	84.9	29.4	28	SSE			1		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.53	750.0	30.07	763.6	73.6	23.1	50	SE			1	2c				0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.84	757.9	30.12	765.0	69.6	20.9	59	E			2		8		WSW	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.22	742.3	30.10	764.4	74.3	23.5	87	SSW			2		1		W	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.72?	754.9?	30.20?	768.5?	69.8	21	80	SSE			1		5km		S	0.098	2.5	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.82	757.4	30.07	763.6	68.7	20.4	76	Calm			0		10		Calm	0	0		The Staff.
Carcassonne, Normal School	29.53	750.1	29.96	761.0	82.4	28	46	SE			4		2	W	W	0	0	Slightly cl'dy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.48	748.8	30.02	762.5	77.5	25.3	85	NW			2		10	SE	SE	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.81	757.2	30.12	765.0	74.8	23.5	56	SE			1		2			0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.6	30.01	762.3	80.6	27.0	44	W			1		1			0	0	Almost clear	Alluard, Director.
Commercy, Normal School	29.28	743.7	30.14	765.5	69.4	20.8	61	E			1	c		E		0	0	Almost clear	Dr. Coulet, Director.
Commune de Gréasque*	29.00	736.7	30.15	765.7	82.4	28.0	27	N			3		2	E		0	0	¾ covered	V. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	29.84	757.8	30.04	763.1	65.5	18.6	83	W			1		10		W	0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.73	755.1	30.03	762.8	69.6	20.9	72	SE			3		5		SE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.5	30.19	766.9	72.7	22.6	92	NW			1		5		NE	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.13	765.2	30.16	766.0	70.3	21.3	89	SE			1		0			0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	29.04	737.5	30.05	763.3	68.0	20	65	NNE			1		2s		E	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.95	760.6	30.16	766.1	90.3	32.4	61	S			1		0			0	0		Boyer, Director.
Privas, Normal School	29.07	738.4	30.10	764.6	75.2	24	40	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.30	642.6			61.5	16.4	56	SW			1		2		NW	0	0	Slightly cl'dy	Alluard, Director.
Rochefort, Naval Obs'y	29.95	760.7	29.98	761.5	71.6	22.0	74	E			1		10	S	S	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.98	761.6	30.07	763.7	73.8	23.2	50	E			1		5			0	0	Cloudy	F. Lucard, Director.
Saint Malo (Port)			30.00	762.0	66.7	19.3	77	ESE			1		8		SE	0	0	Very cloudy	M. H. Hercouet.
Tarbes, Normal School	28.89	733.9	29.96	761.0	64.4	18	80	WSW			3		2	WSW	W	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.08	2.		L'Abbé Marchès.
Lyons			30.08	763.9	79.7	26.5	41						5			0	0		L. Jays.
Marseilles, Observatory			30.10	764.5	79.0	26.1	47	W			1		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.01	635.2	30.32	770.2	69.8	21.0	29	SSW			6		2		SE	0	0		M. Cave.
Nice			30.08	763.9	76.1	24.8	76	SW			1		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.79	756.6	30.07	763.6	71.4	21.9	64	E			3		8		WSW	0	0		Marié Davy, Director
Perpignan			30.02	762.4	88.9	31.6	15	SE	22.4	10.00			6		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.73	577.3			64.0	17.8		Calm			0		8			0	0	Fair	Gen'l de Nansouty
Saint Maur, (near Paris)	29.91	759.6	30.07	763.8	71.1	21.7	56	E			2		7	WSW		0	0	Very cloudy	E. Renou.
Toulouse, Observatory	29.33	744.9	30.04	763.1	82.0	27.8	40	SSE			4		4			0	0		The Staff.
Tours																			C. Marquet.
Versailles																			Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.92	760.0	29.95	760.6	72.0	22.2	98	Calm	0	0			6k			0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.35	745.5	30.20	767.0	72.3	22.4	54	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	30.11	764.9	30.28	769.2	70.3	21.3	51	S	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.79	756.6	30.32	770.2	67.3	19.6	49	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.72	754.8	30.13	765.4	71.2	21.8	67	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	Albert Senz.
Cassel	29.64	752.8	30.25	768.3	70.2	21.2	58	E	.....	.....	3	.....	0	.....	.....	0	0	.....	Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	73.0	22.8	50	SE	.....	.....	2	.....	5cs	.....	.....	0	0	.....	Director Lose.
Emden	30.21	767.2	30.24	768.1	68.0	20.0	60	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.85	758.2	30.21	767.2	70.9	21.6	.....	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.74	729.9	30.15	765.8	63.9	17.7	80	SW	.....	.....	3	.....	0	.....	.....	0	0	.....	M. Wilhelm.
Hamburg	30.19	766.8	30.26	768.5	69.3	20.7	71	W	.....	.....	3	.....	8k	.....	.....	0	0	Dust-Haze.	Captain F. Hegemann.
Kiel	30.21	767.4	30.23	767.8	69.6	20.9	72	SW	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	30.09	764.2	30.17	766.3	65.8	18.8	78	W	.....	.....	4	.....	6	.....	.....	0.004	0.1	.....	Prof. E. Luther.
Köslin	.....	.....	30.20	767.1	64.4	18.0	.....	.....	.....	.....	.....	.....	4	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.87	758.7	30.28	769.2	69.4	20.8	47	ESE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	30.10	764.6	30.15	765.8	63.1	17.3	77	WNW	.....	.....	2	.....	1ks	.....	.....	.....	.....	.....	Reinbrecht and Skalweit
Neufahrwasser	30.20	767.0	30.21	767.4	65.5	18.6	81	WSW	.....	.....	3	.....	10	.....	.....	0	0	.....	A. Lothes.
Posen	30.03	762.8	30.31	769.9	68.0	20.0	51	W	.....	.....	4	.....	9	.....	.....	0	0	....	Dr. Magener.
Strassburg (in Alsace)	29.63	752.5	30.16	766.1	70.5	21.4	61	NNE	.....	.....	2	.....	1	.....	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.23	742.4	30.14	765.5	73.0	22.8	42	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.61	752.0	30.13	765.3	72.5	22.5	45	NE	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.72	729.4	30.19	766.9	68.5	20.3	47	ESE	3.4	1.5	.....	.....	1c	.....	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.24	768.2	30.28	769.2	65.5	18.6	81	WSW	.....	.....	3	.....	3	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.52	749.7	29.89	759.1	88.3	31.3	.....	NE	.....	.....	5.0	.....	.....	.....	.....	.....	.....	Clear.	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.65	753.1	29.70	754.4	89.0	31.7	65	WSW	37?	16.5?	.....	.....	2	.....	.....	0	0	D. clouds	
Deesa	29.28	743.6	29.74	755.5	90.2	32.3	69	WNW	.....	.....	.....	.....	8	E	.....	0	0	D. clouds	
Bombay	29.72	754.8	29.76	755.8	83.5	28.6	85	S	21	9.4	.....	.....	10	NE	N	0	0	Overcast	
Poona	27.76	705.2	29.76	755.8	79.8	26.6	81	WSW	.....	.....	.....	.....	10	.....	SSW	0	0	Overcast	
Lahore	28.85	732.8	29.56	750.9	97.2	36.2	52	W	0.8	0.4	.....	.....	0	.....	.....	0	0	Blue sky	
Belgaum	27.27	693.0	29.81	757.1	74.9	23.8	86	W	3	1.3	.....	.....	7	SE	W	0	0	D. clouds	
Roorkee	28.71	729.3	29.59	751.5	89.8	32.1	71	Calm	3	1.3	.....	.....	2	.....	.....	0	0	.....	
Agra	29.08	738.5	29.62	752.3	95.1	35.1	54	NW	.....	.....	.....	.....	4	.....	NW	0	0	.....	
Nagpur	28.70	729.1	29.75	755.5	78.6	25.9	87	Calm	3.3	1.3	.....	.....	9	.....	E	0.09	2.3	Gloomy	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.34	745.3	29.65	753.1	82.5	28.1	90	Calm	0.9	0.4	.....	.....	10	.....	.....	0.09	2.3	Overcast	
Patna	29.52	749.8	29.70	754.4	81.5	27.5	90	Calm	1	0.4	.....	.....	8	.....	.....	0.20	5.1	D. clouds	
Hazaribagh	27.70	703.5	29.71	754.6	76.8	24.9	90	WNW	4.5	2.0	.....	.....	10	.....	.....	0.63	16.0	Thunder-storm	
Cuttack	29.70	754.3	29.78	756.3	82.0	27.8	79	N	1.8	0.8	.....	.....	10	.....	.....	1.61	40.9	Raining	
Calcutta (Alipore)	29.68	753.9	29.70	754.5	81.2	27.3	96	SW	2	0.9	.....	.....	9	.....	S	0.17	4.3	Showery	
Goalpara	29.32	744.7	29.71	754.5	83.6	28.7	72	Calm	2.8	1.2	.....	.....	1	E	.....	0.02	0.5	D. clouds	
Chittagong	29.66	753.3	29.75	755.6	85.9	29.9	84	WSW	1.4	0.6	.....	.....	9	.....	.....	0	0	Misty	
Sibsagar	29.37	746.0	29.70	754.3	85.8	29.9	74	SE	1.4	0.6	.....	.....	10	SW	SW	1.45	36.8	D. clouds	
Jubbulpore	28.39	721.0	29.74	755.5	81.2	27.3	78	N	2.5	1.1	.....	.....	6	.....	.....	0.35	8.9	Overcast	
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.76	756.0	30.16	766.0	76.6	24.8	39	E	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.05	763.2	30.15	765.9	77.2	25.1	39	ESE	11.9	5.3	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.97	761.1	30.15	765.8	77.4	25.2	39	E	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.87	733.2	30.13	765.4	77.0	25.0	43	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.67	753.5	30.17	766.3	77.0	25.0	37	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.28	743.6	30.15	765.8	75.4	24.1	43	NNW	2.5	1.1	.....	.....	2	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.20	716.6	30.14	765.5	71.2	21.8	42	WNW	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.85	758.2	30.07	763.6	84.0	28.9	23	ENE	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.92	759.9	30.08	764.1	81.1	27.3	28	N	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.85	758.2	30.16	766.1	76.8	24.9	37	ENE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.83	757.6	30.08	763.9	78.8	26.0	39	NE	.....	.....	6	.....	0	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.91	759.7	29.99	761.8	76.6	24.8	50	NW	13.0	5.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.06	763.5	30.11	764.7	73.6	23.1	65	NNW	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.60	726.5	30.11	764.8	67.3	19.6	68	NNE	.....	.....	6	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.74	755.3	29.91	759.6	88.2	31.2	28	E	9.4	4.2	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.76	755.9	29.95	760.8	73.2	22.9	68	NNE	.....	.....	6	.....	10	E	.....	0.106	2.7	.....	Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.2	75.7	24.3	57	WNW	26.2	11.7	.....	.....	6	.....	.....	0.142	3.6	.....	Prof. C. De Giorgi.
Cagliari	29.70	754.4	29.89	759.1	82.9	28.3	48	SE	.....	.....	2	.....	4	NE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.03	737.4	29.92	760.0	68.4	20.2	67	SW	3.8	1.7	.....	.....	10	.....	.....	0.958	24.2	.....	Prof. F. D. Conti.
Palermo	29.55	750.6	29.80	756.9	75.9	24.4	62	ENE	3.8	1.7	.....	.....	5	.....	.....	0.437	11.1	.....	Prof. G. Cacciatore.
Syracuse	29.71	754.6	29.78	756.5	70.7	21.5	74	NW	2.6	1.1	.....	.....	9	NE	.....	1.138	28.9	.....	Prof. V. Ginliano.
SUB-SERIES.																			
Naples, S. R	29.43	747.4	29.98	761.5	66.0	18.9	92	NE	0	0	.....	.....	10	W	.....	0.154	3.9	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.66	753.3	29.85	758.2	75.5	24.2	72	NE	6.0	2.7	.....	.....	6s;ck	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.81	757.2	29.88	758.9	66.5	19.2	99	N	7.3	3.3	.....	.....	10n	.....	.....	2.630	66.80	Raining	
Tokei (Yeddo) University	29.76	755.9	29.86	758.4	67	19.4	100	NNW	8	3.6	.....	.....	.....	.....	.....	3.75	95.30	.....	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Cuernavaca	.....	.....	.....	.....	63.4	17.4	75	N	.....	.....	4	8ck	2s	E	Calm	0	0	Very cloudy	P. Ceballos.
Guadalajara	25.09	637.2	30.04	763.0	59.0	15.0	91	N	.....	.....	2	0	Fog	.....	.....	0	0	Foggy	Prof. L. Perez.
Guanajuato	23.69	601.7	29.82	757.6	63.5	17.5	75	ENE	.....	.....	.....	2	0	.....	.....	0	0	Clear	F. Ortiz.
Leon	24.45	620.1	29.95	760.6	62.2	16.8	79	SW	.....	.....	1	1c	3k	NE	Calm	0.575	14.62	Fair	Prof. M. Leal.
Mexico	23.09	586.4	30.09	764.3	54.0	12.2	87	Calm	0	0	.....	0	3k	.....	.....	0.45	11.5	.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.3	16.3	95	SW	.....	.....	1	2c	0	.....	.....	1.158	29.4	Clear	M. V. de Leon, M. E.
Puebla	23.34	592.8	29.98	761.6	54.9	12.7	88	N	1.2	0.5	.....	0	2s	.....	.....	0.71	18.08	Clear	Prof. B. Gonzalez.
Tlacotalpam	29.88	759.0	29.89	759.2	77.9	25.5	91	SW	.....	.....	1	0	10n	.....	S	1.22	31.	Threatening	M. M. Châzaro.
San Luis Potosi	24.21	614.1	30.10	764.5	60.0	15.6	51	SE	3.1	0.4	.....	1	2	W	SE	0	0	Clear	G. Barroeta, M. D.
Vera-Cruz	29.90	759.5	29.93	760.2	77.9	25.5	83	NW	3.4	1.5	.....	.....	9kn	.....	E	0.142	3.6	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	50.0	10	76	NE	.....	.....	1	2	4	SW	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.21	589.4	29.96	761.0	52.7	11.5	87	NNE	0	0	.....	1	0	Calm	.....	0.965	24.5	Clear	Prof. P. Spina, [M. M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.33	719.6	29.95	760.8	78.8	26.0	90	Calm	0	0	.....	0	8	.....	S	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.19	766.9	30.19	766.9	71.6	22.0	.....	E	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.19	766.8	30.24	768.2	67.5	19.7	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.21	767.1	30.21	767.4	65.5	18.6	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.19	766.7	30.19	766.7	71.2	21.8	73	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.17	766.4	30.22	767.6	70.7	21.5	61	SE	.....	.....	2	2	.....	.....	.....	0	0	Slightly cl'dy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.04	763.0	30.10	764.4	62.6	17.0	78	SW	7.4	3.3	.....	.....	6	.....	.....	0.020	0.5	.....	
Brönö	29.82	757.4	29.86	758.4	54.0	12.2	94	SW	18	8	.....	.....	10	.....	.....	0.709	18.0	Light rain...	
Christiania	29.85	758.3	30.00	761.9	71.4	21.9	60	WSW	4	2	.....	.....	7	.....	.....	0	0	.....	
Tromsö	29.68	753.9	29.72	755.0	50.7	10.4	70	Calm	0	0	.....	.....	5	.....	.....	0.232	5.9	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.89	759.2	30.08	764.0	68.9	20.5	75	NNE	1.8	0.8	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.7	29.99	761.8	78.6	25.9	60	SSW	4.3	1.9	.....	.....	9	SSW	.....	0.146	3.7	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.93	760.3	30.02	762.5	77.9	25.5	65	SW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.64	752.9	29.99	761.8	74.1	23.4	81	SW	12.5	5.6	.....	.....	2	.....	.....	0.839	21.3	.....	The Staff.
Ponta Delgada, (Azores)	30.00	762.1	30.08	763.9	74.8	23.8	69	E	3.8	1.7	.....	.....	4	.....	.....	0.110	2.8	.....	

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

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 14′, W. 24° 56′	2	.....	D. Clouds ...	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	2	W	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	2	SSW	D. Clouds ...	L. Ribeiro de Costa, Com'd't.
S. da Bandeira, S. 8° 48′, E. 13° 08′	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	0	.....	D. clouds.....	M T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.83	757.6	30.24	768.1	65.8	18.8	62	WNW	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.74	755.3	30.15	765.9	59.2	15.1	86	SW	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Dorpat	29.76	756.0	30.00	762.0	65.3	18.5	72	W	9	4	.....	.....	10ks;n	.....	.....	.....	.....	.....	Prof. Dr. Weibrauch.
St. Petersburg	29.90	759.4	29.91	759.8	62.1	16.7	79	NW	16	7	.....	.....	8k;ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.45	748.1	30.07	763.6	70.5	21.4	54	NW	7	3	.....	.....	9ck	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.05	763.2	30.12	765.0	78.8	26.0	50	N	13	6	.....	.....	2k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.02	762.4	30.04	762.9	80.2	26.8	64	NNW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.37	746.1	29.91	759.6	63.7	17.6	70	N	9	4	.....	.....	8ks	.....	.....	.....	.....	Light rain....	Meteorological Obs.
Lugan	29.71	754.7	29.91	759.7	75.4	24.1	52	NNW	9	4	.....	.....	4k	.....	.....	.....	.....	.....	Meteorological Obs
Archangel	29.65	753.1	29.67	753.6	53.4	11.9	79	NW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.62	726.9	29.96	761.0	82.8	28.2	39	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.09	764.2	30.00	762.1	80.1	26.7	38	SE	16	7	.....	.....	0	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.23	742.4	29.69	754.1	58.1	14.5	95	NE	4	2	.....	.....	10n	.....	.....	.....	.....	Raining	Cand. Fatjanow.
Kasan	29.47	748.5	29.73	755.2	59.9	15.5	92	W	2	1	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischei.
Ekaterinburg	29.02	737.1	29.95	760.7	58.6	14.8	92	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Nukuss	29.88	758.9	30.10	764.6	80.4	26.9	37	WNW	4	2	.....	.....	1k	.....	.....	.....	.....	.....	
Tashkend	28.57	725.6	30.24	768.0	69.4	20.8	63	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.56	750.8	30.07	763.7	63.5	17.5	43	SW	9	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.77	756.2	30.06	763.5	51.3	10.7	89	NW	2	1	.....	.....	10	.....	.....	.....	.....	Raining.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.80	756.9	29.94	760.5	78.3	25.7	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,541.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 392 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E. 45° 34′.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.98	761.4	30.08	763.9	81.3	27.4	62	S	1.6	0.72	.....	.....	7	.....	.....	0	0	.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	29.84	757.8	29.89	759.2	92.5?	33.6?	44	S	3.2	1.43	.....	4	1	SE	.....	0	0	Cloudy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.11	688.6	.....	.....	80.6	27.0	67	SW	6.3	2.82	.....	.....	8	.....	.....	0	0	Cloudy.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.86	707.6	30.00	761.9	77.7	25.4	65	NW	8.9	4.00	.....	0	9	.....	.....	Inap.	Inap.	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.93	760.1	30.07	763.8	79.2	26.2	65	NE	3.9	1.75	.....	3	5	W	.....	0.008	0.21	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.01	736.8	29.88	759.0	66.7	19.3	97	SSW	7.4	3.33	.....	.....	10	.....	.....	0.421	10.7	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	759.0	29.95	760.7	81.0	27.2	84	Calm	0	0	.....	1c	0	.....	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.89	759.1	29.98	761.5	84.6	29.2	51	ESE	34.2	15.3	.....	1	4	E	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.87	758.8	29.97	761.1	82.4	28.0	89	SE	5.5	2.45	.....	6s	3k	SE	SE	0.148	3.75	D. clouds....	Leonardo de Tejeda, Ch'f Eng'r.

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.84	758.0	29.88	759.0	59.7	15.4	.....	S	.....	.....	2	.....	4	.....	.....	0	0	.....	
Umea	29.84	757.9	29.89	759.2	63.7	17.6	58	SW	.....	.....	2	.....	6	.....	.....	0	0	.....	
Hernosand	29.87	758.7	29.92	760.0	65.5	18.6	57	W	.....	.....	2	.....	4	.....	.....	0	0	.....	
Stockholm	29.80	756.9	29.98	761.4	67.6	19.8	86	W	.....	.....	4	.....	4	.....	.....	0	0	.....	
Wisby	29.93	760.1	29.98	761.6	66.6	19.2	72	W	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.90	759.4	29.97	761.3	69.1	20.6	66	W	7.2	3.2	.....	.....	3	NW	WNW	0.003	0.07	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.76	730.6	30.17	766.2	61.9	16.6	75	N	.....	.....	2	.....	3	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.57	725.6	30.17	766 3	64.9	18.3	73	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +8.2 m.m.; Thermometer, —3.1 cent.; Relative Humidity, +15 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.00	762.0	76.5	24.7	66	NE	22	10.0	.....	.....	4	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.04	762.9	89.2	31.8	.....	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'ty	29.69	754.1	29.79	756.7	92.8	33.8	57	W	.....	.....	3	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	30.15	765.8	30.22	767.6	62.0	16.7	96	Calm	0	0	.....	0?	0?	.....	.....	0	0	Cloudy?	Hon. J. Ferguson.
Brockville, Ontario	29.70	754.4	29.99	761.7	66	18.9	.....	E	1	0.4	.....	.....	10s	.....	E	0.12	3.0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.20	767.1	30.26	768 6	54	12.2	93	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	G. A. Blair.
Charlottetown, P. E. Island.	30.17	766.3	30.21	767.3	60	15.6	82	NE	6	2.7	.....	0	5ks	.....	NE	0	0	Fair	H. J. Cundall, C. E
Cornwall, Ontario	29.81	757.2	30.00	762.0	64.8	18.2	94	E	.....	.....	1	.....	10s	.....	.....	0	0	Overcast	James Smith, M. A
Dalhousie, N. B	30.08	764 0	30.25	768.3	57	13.9	85	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.19	766.8	36.24	768.1	48.3	9.1	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.19	766.8	30.21	767.3	55	12.8	84	W	2	0.9	.....	5ck	Haze	W	Calm	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.18	766.6	30.25	768.3	56.8	13.8	83	NE	6	2.7	.....	6ck	d	.....	E	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.05	737.9	29.85	758 2	65	18.3	92	NE	8	3.6	.....	5k	5n	SW	SW	0	0	Cloudy	James Stewart.
Granton, Ontario	28.89	733.8	29.96	761.0	62	16.7	100	Calm	.....	.....	0	.....	10n	.....	.....	0.03	0.8	Overcast	James Grant.
*Halifax, N. S	30.04	763.0	30.17	766.3	59	15.0	92	E	4	1.8	.....	.....	10n	.....	SE	0.120	3.05	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.64	752.8	30.00	762.0	65.7	18.7	95	SW	.....	.....	2	0	8ks	.....	.....	0.08	2.0	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.18	766.6	30.20	767.1	52	11.1	69	NW	.....	.....	2	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.65	753.1	29.97	761.2	68	20.0	94	NE	7	3.1	.....	.....	10ks	.....	NE	0.57	14.5	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.19	766 8	30.23	767.8	57.0	13.9	83	E	12	5.4	.....	8k	0	E	.....	0 07	1.8	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.85	758.2	30.05	763.3	63	17.2	92	E	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.33	745 0	30.00	762.0	64	17.8	97	NE	9	4.0	.....	.....	Fog	.....	NE	0	0	Foggy	Rev. R. Mosley.
Peterboro, Ontario	29.24	742.7	29.96	761.0	66.7	19.3	94	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.30	744.2	29.97	761.2	62	16.7	94	N	4	1.8	.....	5k	5n	W	W	0.40	10.2	Cloudy	H. Morgan.
Port Hastings, N. S	30.17	766 3	30.22	767.6	58.3	14.6	.....	SW	8	3.6	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.34	745.2	29.97	761.2	62	16.7	96	NW	3	1.3	.....	.....	10ks	.....	N	0.23	5.8	Cloudy	M. Payne.
*Quebec, Quebec	29.85	758.2	30.16	766.1	61	16.1	88	E	.....	.....	5	.....	10n	.....	E	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.58	751.3	30.02	762.5	68	20.0	84	NE	5	2.2	.....	5cs	0	E	.....	0.03	0.8	Fair	W. H. McIntyre.
St. Andrews, N. B	30.14	765.5	30.19	766.8	59	15.0	80	E	1	0.4	.....	.....	10ks	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	30.06	763.5	30.22	767.6	57	13.9	81	NE	5	2.2	.....	.....	9ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	29.97	761.2	64	17.8	95	NE	6	2.7	.....	.....	Fog	.....	.....	0.04	1.0	Light rain	K. Stewart.
Stayner, Ontario	29.21	741.9	29.96	761.0	68	20.0	89	Calm	0	0	.....	.....	10n	.....	NE	0.05	1.3	Cloudy	R. J. Cole.
Stratford, Ontario	28.72	729.5	29.96	761.0	62.2	16.8	93	SE	3	1.3	.....	2cs	6s	NE	.....	0.458	11.63	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.22	767.6	30.25	768.3	58	14.4	80	E	5	2.2	.....	8k	2ks	Calm	E	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.59	751.6	29.96	761.0	66	18.9	91	N	6	2.7	.....	.....	10ks	.....	NE	0.91	23.1	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	52.0	11.1	79	NE	.....	.....	.....	Sm'e	Sm'e	.....	.....	0	0	Fair	John Delany.

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

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.79	756.7	30.01	762.2	67	19.4	95	S	1	0.4	.....	.....	10n	.....	SE	0.01	0.3	Light rain...	
Alpena, Michigan	29.37	746.0	30.00	762.0	63	17.2	94	NW	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
Atlantic City, New Jersey	29.92	760.0	29.94	760.5	74	23.3	100	SE	10	4.5	.....	.....	10s;fg	.....	Calm	0	0	Cloudy.....	
Augusta, Georgia	29.84	757.9	30.02	762.5	77	25.0	86	SE	1	0.4	.....	5c;ck	Fog	W;SW	.....	0	0	Fair...	
Baltimore, Maryland	29.89	759.2	29.93	760.2	74	23.3	76	W	2	0.9	.....	2ck	2s	Calm	Calm	0.01	0.3	Fair.....	
Barnegat, New Jersey	29.93	760.2	29.95	760.7	72	22.2	95	SE	20	8.9	.....	.....	10n	.....	SE	0.04	1.0	Thunder-storm..	
Bismarck, Dakota	27.99	710.9	29.85	758.2	63	17.2	89	N	24	10.7	.....	.....	10s	.....	NW	0	0	Cloudy.....	
Boerne, Texas	28.51	724.1	.....	.....	71	21.7	85	E	6	2.7	.....	7k	0	E	.....	0	0	Cloudy.....	
Boise City, Idaho	27.24	691.9	30.20	767.1	51	10.4	78	SE	8	3.6	.....	5k	0	Calm	.....	Inap.	Inap.	Fair	
Boston, Massachusetts	29.96	761.0	30.11	764.8	62.5	16.9	100	NE	13	5.8	.....	.....	10n;fg	.....	.....	0.13	3.3	Light rain..	
Brackettville, Texas	28.80	731.5	29.80	756.9	75	23.9	81	E	1	0.4	.....	0	8s	.....	SE	0	0	Cloudy	
Breckenridge, Minnesota	28.81	731.8	29.76	755.9	65	18.3	94	SE	14	6.3	.....	5k	0	SW	.....	0	0	Fair	
Brownsville, Texas	29.94	760.5	30.01	762.2	78	25.6	90	W	5	2.2	.....	0	8ks	.....	W	1.18	30.0	Fair	
Buffalo, New York	29.26	743.2	29.93	760.2	64	17.8	89	NE	3	1.3	.....	5k	5s	Calm	Calm	1.79	45.5	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.83	757.7	30.08	764.0	71	21.7	75	S	4	1.8	.....	1c	0	W	.....	0	0	Clear.....	
Cairo, Illinois	29.59	751.6	29.97	761.2	72	22.2	80	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Camp Apache, Arizona	.....	.....	.....	.....	58	14.4	87	NE	.....	.....	1	0	0	.....	.....	Blank	Blank	Clear.....	
Camp Grant, Arizona	25.16	639.0	29.96	761.0	61	16.1	71	N	.....	.....	1	0	0	.....	.....	0.14	3.6	Clear.....	
Camp Verde, Arizona	26.70	678.2	30.19	766.8	67	19.4	79	SE	.....	.....	1	5k	0	Calm	.....	0.22	5.6	Fair.....	
Campo, California	27.24	691.9	29.80	756.9	40	4.4	83	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Cape Hatteras, N. Carolina	29.98	761.5	29.99	761.7	79	26.1	87	W	4	1.8	.....	.....	10s	.....	W	0.02	0.5	Cloudy.....	
Cape Henry, Virginia	29.91	759.7	29.94	760.5	73	22.8	90	SW	2	0.9	.....	5cs	0	SW	.....	0	0	Fair.....	
Cape Lookout, N. Carolina	30.00	762.0	30.01	762.2	80	26.7	87	W	13	5.8	.....	.....	10ks	.....	W	0.13	3.3	Cloudy.....	
Cape May, New Jersey	29.91	759.7	29.94	760.5	76	24.4	95	S	4	1.8	.....	.....	Fog	.....	S	0	0	Foggy	
Castroville, Texas	29.14	740.1	29.82	757.4	76	24.4	82	E	5	2.2	.....	.....	10ks	.....	E	0	0	Cloudy	
Charleston, South Carolina	29.98	761.5	30.04	763.0	80	26.7	87	W	2	0.9	.....	2ck	5s	W	SW	0.40	10.2	Fair	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	49	9.4	85	N	24	10.7	.....	.....	10s	.....	N	0	0	Threatening	
Chicago, Illinois	29.36	745.7	30.03	762.7	64	17.8	83	N	4	1.8	.....	5k	Fog	N	.....	0	0	Fair	
Cincinnati Ohio	29.36	745.7	29.98	761.5	68	20.0	79	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.26	743.2	29.96	761.0	65	18.3	89	S	4	1.8	.....	0	5ks	.....	NW	0.09	2.3	Fair.....	
Coleman City, Texas	28.17	715.5	29.78	756.4	67	19.4	74	Calm	0	0	.....	2ck	5s	SW	S	0	0	Fair.....	
Columbus, Ohio	29.17	740.9	29.98	761.5	65	18.3	78	NW	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
Coueno, Texas	28.05	712.5	29.66	753.4	68	20.0	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Corsicana, Texas	29.52	749.8	29.97	761.2	71	21.7	90	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Davenport, Iowa	29.45	748.3	30.08	764.0	64	17.8	89	Calm	0	0	.....	Haze	Haze	Calm	Calm	0	0	Hazy.....	
Decatur, Texas	28.84	732.5	29.96	761.0	72	22.2	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Denison, Texas	29.21	741.9	29.97	761.2	74	23.3	81	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear.....	
Denver, Colorado	24.80	629.9	30.02	762.5	61	16.1	50	N	8	3.6	.....	0	5s	.....	Calm	0	0	Fair.....	
Des Moines, Iowa	29.14	740.1	29.98	761.5	70	21.1	70	SW	1	0.4	.....	0	Haze	.....	Calm	0	0	Hazy.	
Detroit, Michigan	29.33	745.0	29.98	761.5	64	17.8	89	NW	3	1.3	.....	.....	10s	.....	W	0.05	1.3	Cloudy.....	
Dodge City, Kansas	27.40	696.0	29.60	751.8	66	18.9	84	S	12	5.4	.....	0	0	.....	.....	0	0	Clear.....	
Dubuque, Iowa	29.38	746.2	30.06	763.5	61	16.1	77	SE	1	0.4	.....	Haze	Fog	Calm	Calm	0	0	Fair	
Duluth, Minnesota	29.35	745.5	30.00	762.0	64	17.8	89	NE	6	2.7	.....	0	5s	.....	NE	0	0	Fair	
Eagle Pass, Texas	29.24	742.7	29.96	761.0	72	22.2	95	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Eastport, Maine	30.12	765.0	30.19	766.8	56	13.3	81	NE	8	3.6	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy.....	
Edinburg, Texas	.....	.....	.....	.....	76	24.4	91	NW	.....	.....	1	0	2s	.....	Calm	0	0	Fair.....	
El Paso, Texas	.....	.....	.....	.....	78	25.6	65	W	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Erie, Pennsylvania	29.25	742.9	29.93	760.2	67	19.4	89	S	1	0.4	.....	2k	2s	Calm	Calm	0.13	3.3	Fair...	
Escanaba, Michigan	29.44	747.8	30.09	764.3	56	13.3	87	NW	3	1.3	.....	.....	Fog	.....	.....	0	0	Dense fog....	
Florence, Arizona	28.35	720.1	29.95	760.7	75	23.9	77	N	.....	.....	1	0	0	.....	.....	1.05	26.7	Clear.....	
Fort Craig, New Mexico	25.48	647.2	29.61	752.8	65	18.3	73	E	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy.....	
Fort Davis, Texas	25.18	639.6	30.14	765.5	68	20.0	64	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.46	748.3	29.98	761.5	70	21.1	85	E	2	0.9	.....	0	Haze	.....	Calm	0	0	Hazy.....	
Fort Griffin, Texas	28.70	729.0	29.93	760.2	69	20.6	75	Calm	0	0	.....	0	0	.....	.....	0	0	Cloudy.....	
Fort McKavett, Texas	27.81	706.4	29.65	753.1	75	23.9	68	SE	2	0.9	.....	5k	0	NW	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.85	758.2	72	22.2	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	29.90	759.4	29.94	760.5	76	24.4	91	E	8	3.6	.....	.....	10n	.....	E	2.34	59.4	Heavy rain..	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.40	746.7	30.04	763.0	63	17.2	83	NE	2	0.9	.....	0	5s	.....	NE	0	0	Fair.....	
Indianapolis, Indiana	29.25	742.9	30.01	762.2	62	16.7	94	NW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Indianola, Texas	29.89	759.2	29.91	759.7	75	23.9	95	SE	15	6.7	.....	.....	10n	.....	E	0.28	7.1	Light rain...	
Jacksboro, Texas	28.94	735.1	30.03	762.7	72	22.2	80	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.98	761.5	30.00	762.0	78	25.6	91	SE	1	0.4	.....	.....	10s	.....	Calm	0.69	17.5	Cloudy.....	
Keokuk, Iowa	29.41	747.0	30.00	762.0	68	20.0	74	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.	
Key West, Florida	29.94	760.5	29.97	761.2	82	28.3	79	E	4	1.8	.....	2c	2ks	Calm	E	0	0	Fair	
Kittyhawk, North Carolina	29.94	760.5	29.97	761.2	77	25.0	91	W	6	2.7	.....	10cs	0	W	.....	0.09	2.3	Cloudy.....	
Knoxville, Tennessee	29.63	737.3	30.00	762.0	71	21.7	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
La Crosse, Wisconsin	29.33	745.0	30.04	763.0	70	21.1	66	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	25.98	659.9	30.14	765.5	68	20.0	79	Calm	0	0	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Laredo, Texas	29.46	748.3	29.78	756.4	75	23.9	90	N	3	1.3	.....	10k	0	NW	.....	0	0	Cloudy.....	
Lead City, Dakota	24.84	632.2	30.16	766.1	48	8.9	85	N	7	3.1	.....	.....	10n	.....	Calm	0.02	0.5	Light rain...	
Leavenworth, Kansas	29.12	739.6	29.94	760.5	68	20.0	70	S	1	0.4	.....	0	0	.....	.....	0	0	Clear.	
Los Angeles, California	29.51	749.5	29.84	757.9	64	17.8	83	SE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Louisville, Kentucky	29.47	748.5	30.01	762.2	68	20.0	74	N	5	2.2	.....	0	Sm'e	.....	N	0	0	Smoky.....	
Lynchburg, Virginia	29.31	744.5	29.96	761.0	75	23.9	72	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Marquette, Michigan	29.37	746.0	30.06	763.5	59	15.0	82	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.33	719.6	30.02	762.5	73	22.8	85	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy.....	
Memphis, Tennessee	29.70	754.4	30.01	762.2	75	23.9	75	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.35	745.5	30.07	763.8	69	15.6	82	NW	8	3.6	.....	7ck	0	E	.....	0	0	Fair.....	
Mobile, Alabama	29.97	761.2	30.01	762.2	76	24.4	91	SW	3	1.3	.....	.....	10s	.....	SW	0.01	0.3	Cloudy.....	
Montgomery, Alabama	29.79	756.7	30.02	762.5	75	23.9	76	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.95	735.3	29.96	761.0	70	21.1	80	SW	1	0.4	.....	.....	10ks	.....	SW	0.08	2.0	Cloudy.....	
Mt. Washington, N. H.	24.03	610.4	30.39	771.9	47	8.3	100	E	15	6.7	.....	.....	Fog	.....	E	0.41	10.4	Foggy	
Nashville, Tennessee	29.49	749.0	30.00	762.0	73	22.8	76	Calm	0	0	.....	1c	Sm'e	W	Calm	0	0	Clear.....	
New Haven, Connecticut	29.94	760.5	30.05	763.3	68	20.0	84	NE	8	3.6	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy.....	
New London, Connecticut	30.03	762.7	30.04	764.0	66	18.9	80	E	6	2.7	.....	.....	10s	.....	NE	Inap	Inap.	Cloudy.....	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	80	26.7	87	NE	6	2.7	.....	8ck	0	SW	.....	0.30	7.6	Fair.....	
Newport, Rhode Island	30.02	762.5	30.07	763.8	66	18.9	89	NE	5	2.2	.....	.....	10ks	.....	NE	0	0	Threatening	
New York, New York	29.85	758.2	30.02	762.5	69	20.6	94	SE	16	7.2	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
Norfolk, Virginia	29.90	759.4	29.96	761.0	75	23.9	90	S	3	1.3	.....	5c	0	W	.....	0	0	Fair	
North Platte, Nebraska	27.01	686.0	29.43	747.5	70	21.1	59	SE	24	10.7	.....	5ck	0	W	.....	0	0	Fair.....	
Olympia, Washington Ter.	30.22	767.6	30.26	768.6	47	8.3	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog....	
Omaha, Nebraska	28.86	733.0	29.83	759.2	69	20.6	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Oswego, New York	29.67	753.6	29.98	761.5	70	21.1	85	SE	4	1.8	.....	8c	0	SW	.....	0.10	2.5	Fair.....	
Pembina, Dakota	29.03	736.6	29.79	756.7	64	17.8	89	SE	10	4.5	.....	5c	0	NW	.....	0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.91	759.7	29.96	761.0	73	22.8	95	E	4	1.8	.....	.....	10s;fog	.....	NE;Calm	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.67	728.2	.....	.....	76	24.4	73	Calm	.....	.....	0	0	1s	.....	NW	0.02	0.5	Clear	
Pike's Peak, Colorado	17.92	454.7	30.13	765.3	31	— 0.6	58	SW	4	1.8	.....	5cs	0	W	.....	0	0	Fair	
Pioche, Nevada	24.08	611.6	29.85	758.2	47	8.3	77	W	9	4.0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Pittsburg, Pennsylvania	29.17	740.9	29.96	761.0	61	16.1	94	Calm	0	0	.....	.....	Fog	.....	Calm	0.11	2.8	Foggy	
Port Huron, Michigan	29.32	744.7	29.96	761.0	65	18.3	94	NW	7	3.1	.....	10k	0	NE	.....	0.06	1.5	Cloudy	
Portland, Maine	30.10	764.5	30.15	765.8	60	15.6	94	NE	9	4.0	.....	.....	Fog	.....	.....	0.03	0.8	Foggy	
Portland, Oregon	30.16	766.1	30.27	768.8	50	10.0	93	NW	1	0.4	.....	0	Fog	.....	SE	0	0	Clear	
Prescott, Arizona	24.74	628.4	30.10	764.5	61	16.1	88	SW	3	1.3	.....	0	0	.....	.....	Inap.	Inap	Clear	
Pilot Point, Texas	29.23	742.4	30.02	762.5	76	24.4	77	SE	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	29.98	761.5	30.00	762.0	82	27.8	79	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Red Bluff, California	29.58	751.3	29.92	760.0	74	23.3	22	N	22	9.8	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.95	760.7	80	26.7	59	NW	4	1.8	.....	5k	0	NW	.....	Inap.	Inap.	Fair	
Rochester, New York	29.35	745.5	29.93	760.2	69	20.6	80	S	6	2.7	.....	.....	10ks	.....	SW	0.02	0.5	Cloudy	
Roseburg, Oregon	29.63	752.6	30.21	767.3	45.5	7.5	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.72	754.9	29.80	756.9	67	19.4	42	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.04	763.0	68	20.0	79	NE	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	29.98	761.5	29.99	761.7	74	23.3	100	N	4	1.8	.....	.....	Fog	.....	N	0.01	0.3	Foggy	
St. Paul, Minnesota	29.15	740.4	29.95	760.7	63	17.2	83	SE	10	4.5	.....	2ck	0	Calm	.....	0	0	Fair	
Salt Lake City, Utah	25.65	651.5	29.98	761.5	56	13.3	94	Calm	0	0	.....	.....	10n	.....	Calm	0.65	16.5	Light rain	
San Antonio, Texas	29.24	742.7	29.80	756.9	74	23.3	90	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Threatening	
San Diego, California	29.83	757.7	29.90	759.4	64	17.8	83	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.33	745.0	29.97	761.2	68	20.0	84	NW	13	5.8	.....	8k	2ks	NW	Calm	0.09	2.3	Cloudy	
Sandy Hook, New Jersey	29.98	761.5	30.01	762.2	69	20.6	100	SE	36	16.1	.....	.....	Fog	.....	SE	0.40	10.2	Foggy	
San Francisco, California	29.76	755.9	29.82	757.4	61	16.1	82	S	4	1.8	.....	0	Fog	.....	Calm	0	0	Fair	
Santa Fé, New Mexico	23.32	592.3	29.85	758.2	67	13.9	81	E	1	0.4	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Savannah, Georgia	29.94	760.5	30.02	762.5	78	25.6	91	Calm	0	0	.....	2c	2ks	Calm	Calm	0.24	6.1	Fair	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	75	23.9	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.26	616.2	.....	.....	58	14.4	93	N	1	0.4	.....	.....	10s	.....	Calm	0.16	4.1	Cloudy	
Smithville, North Carolina	30.01	762.2	30.04	763.0	76	24.4	95	W	6	2.7	.....	.....	10s	.....	W	0.26	6.6	Cloudy	
Springfield, Massachusetts	29.96	761.0	30.08	764.0	66	18.9	84	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
Stockton, Texas	26.87	682.5	29.87	758.7	69	20.6	89	SE	12	5.4	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	30.06	763.5	30.11	764.8	61	16.1	100	E	16	7.2	.....	.....	Fog	.....	.....	0	0	Foggy	
Toledo, Ohio	29.33	745.0	29.98	761.5	66	18.9	74	NE	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Tucson, Arizona	27.26	692.4	29 81	757.2	71	21.7	63	SW	2	0.9	.....	0	0	.....	.....	0.03	0.8	Clear	
Tybee Island, Georgia	29.99	761.7	30.02	762.5	77	25.0	86	NW	3	1.3	.....	2cs	5ks	Calm	NW	0.29	7.4	Cloudy	
Umatilla, Oregon	29.87	758.7	.....	.....	60	10.0	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	W	.....	.....	1	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.03	737.3	29.82	757.4	74	23.3	86	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.47	621.5	29.95	760.7	44	6.7	76	NE	4	1.8	.....	.....	10s	.....	NE	0.58	14.7	Cloudy	
Visalia, California	29.57	751.1	29.93	760.2	60	15.6	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.84	757.9	29.95	760.7	73	22.8	85	NW	2	0.9	.....	2k	5ks	W	Calm	0.12	3.0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	70	21.1	90	SE	.....	.....	1	0	2ks	.....	Calm	0.26	6.6	Fair	
Wilmington, N. Carolina	29.94	760.5	30.01	762.2	78	25.6	86	SW	5	2.2	.....	5c;k	0	calm;W	.....	0.95	24.1	Fair	
Winnemucca, Nevada	25.76	654.3	30.12	765.0	43	6.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.02	762.5	30.07	763.8	67	19.4	94	E	3	1.3	.....	.....	10s	.....	NE	0	0	Threatening	
Yankton, Dakota	28.65	727.7	29.88	758.9	67	19.4	74	S	4	1.8	.....	2ck	0	SE	.....	0	0	Fair	
Yuma, Arizona	29.58	751.3	29.74	755.4	82	27.8	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Havana, Cuba, W. I	30.08	764.0	30.13	765.3	34.0	1.1	100	N	1	0.4	.....	4k	5s	SW	N	0.10	2.5	Raining	J. Fortescue, W. Wood.
Santiago de Cuba, W. I	29.95	760.7	29.97	761.2	84	28.9	79	E	1.2	0.5	.....	8c	2ks	SW	E	0	0	Fair	Chas. Hasselbrink.
St. Thomas	29.83	757.7	29.85	758.2	80	26.7	82	N	6	2.7	.....	8cs	4s	SW	NE	0	0	.....	Robert Mason.
Kingston, Jamaica, W. I	.....	.....	.....	.....	85	29.4	76	SE	6	2.7	.....	2c	4ks	E	.....	Inap.	Inap.	Clearing	G. O. Gellich.
Navassa, W. I	30.00	762.0	30.01	762.2	82	27.8	95	Calm	0	0	.....	8c	5ks	Calm	NE	0.06	1.5	.....	James Gall.
Paramaribo, D. Guiana, S. A	29.71	754.6	29.79	756.7	84	28.9	.....	N	20.4	9.1	.....	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
Medellin, Colombia, S. A	30.01	762.2	30.01	762.2	83	28.3	72	E	.....	.....	2	5k	3c	E	.....	0	0	Clear	C. J. Hering
	25.21	640.3	.....	.....	65.0	18.3	85	Calm	0	0	.....	8cs	1ks	.....	.....	0.02	0.5	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.7 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Morgantown, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,500 (?) ft., or 548.7 (?) m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.15	765.8	80	26.7	80	26.7	89	NW	1	0.4	.....	.....	2	.....	NW	0	0	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	30.09‡	764.3‡	.....	.....	59	15.0	94	NE	10	4.5	.....	.....	10	.....	.....	0.3	8.	.....	.....	Stormy	
Naval Hospital, Yokohama, Japan	29.85*	758.2*	70	21.1	67	19.4	98	NNE	.....	.....	6	.....	10n	.....	NNE	3.71	94.2	.....	.....	Heavy rain	
Adams. S. 30° 21′, W. 172° 04′	30.55	776.0	64	17.8	58	14.4	100	ENE	.....	.....	1–2	.....	2	.....	ENE	0	0	Long	ENE	Cloudy	
Alliance, Villafranca, France	30.07‡	763.8‡	.....	.....	79	26.1	78	S	.....	.....	0–1	.....	0	.....	.....	.....	.....	None	.....	Clear.	
Ashuelot. Yokohama, Japan	29.92	760.0	70	21.1	68	20.0	100	N	.....	.....	5	.....	10	.....	E	.....	.....	Mod'ate	N	Rainy	
Alaska. S. 53° 28′, W. 72° 43′	29.68	753 9	52	11.1	43	6 1	75	WSW	.....	.....	4	.....	8	.....	E	0.25	6.3	Smooth	.....	Misty	
Canonicus, New Orleans, La	30.03	762.7	57	13.9	80	26.7	91	NE	.....	.....	6	.....	8	.....	E	.....	.....	.....	.....	Cloudy	
Colorado. New York, N. Y	30.02‡	762.5‡	.....	.....	71	21.7	90	E	10	4.5	.....	.....	10	.....	ESE	0.02	0.5	.....	.....	Foggy	
Constitution, Havre, France	30.12‡	765.0‡	.....	.....	69	20.6	75	NE	.....	.....	4	.....	8	.....	SSW	.....	.....	.....	.....	Partly o'cast	
Despatch, Constantinople, Turkey	30.01‡	762.2‡	.....	.....	78	25.6	82	NE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va	30.08	764.0	77	25.0	75	23.9	95	SW	3.6	1.6	.....	.....	2	.....	wsw	0	0	.....	.....	Fair	
Gettysburg Toulon, France	29.96‡	761.0‡	.....	.....	80	26.7	100	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Clear	
Guard. Bahia, Brazil	30.14	765.5	75	23.9	74	23.3	90	NNW	.....	.....	2	.....	8	.....	N	.....	.....	.....	.....	Fair	
Hartford. Rio de Janeiro, Brazil	29.90	759.4	.....	.....	78	25.6	95	N	3.0	1.3	.....	.....	10	.....	.....	0.24	6.1	.....	.....	Overcast	
Marion. Leghorn, Italy	29.96	761.0	75	23.9	75	23.9	86	W	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa	29.71	754.6	67	19.4	65	18.3	92	S	.....	.....	1	.....	5	.....	N	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.85‡	758.2‡	.....	.....	68	20.0	100	N	.....	.....	3–4	.....	10	.....	N	.....	.....	.....	.....	Raining	
New Hampshire, Port Royal, S. C	30.21†	767.3†	.....	.....	79	26.1	86	NW	4	1.8	.....	.....	5	.....	N	0.32	8.1	.....	.....	Fair	
Onward, Callao, Peru	30.19†	766.8†	.....	.....	62	16.7	77	SE	.....	.....	3	.....	2	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C	30.06	763.5	75	23.9	74	23.3	100	SW	.....	.....	1	.....	8	.....	NE	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China	30.05	763.3	82	27.8	77	25.0	82	SSE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Fair	
Plymouth, New York, N. Y	30.12	765.0	73	22.8	72	22.2	90	ENE	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Foggy	
Ranger. Hong-Kong, China	30.06	763.5	87	30.6	87	30.6	83	SW	.....	.....	2	.....	8	.....	Calm	.....	.....	.....	.....	Fair	
Rio Bravo, Brownsville, Texas	29.85	758.2	78	25.6	78	25.6	95	NNW	.....	.....	1	.....	8	.....	SW	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	29.89‡	759.2‡	.....	.....	74	23.3	81	ENE	.....	.....	1	.....	5	.....	SW	0.07	1.8	.....	.....	Fair	
Saratoga, Long Island Sound	30.10*	764.5*	.....	.....	67	19.4	95	ENE	.....	.....	4–5	.....	10	.....	W	0	0	.....	.....	Misty	
St. Louis, League Island, Pa	29.90	759.4	76	24.4	74	23.3	95	NE	2	0.9	.....	.....	10	.....	NE	0.1	3.	.....	.....	Foggy	
Supply, Havre, France	30.28	769.1	70	21.1	63	17.2	89	SE	.....	.....	2–3	.....	5	.....	NW	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass	30.10‡	764.5‡	.....	.....	65	18.3	89	NE	.....	.....	8	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Trenton, Southampton, England	30.10‡	764.5‡	.....	.....	71	21.7	71	ESE	.....	.....	2	.....	8	.....	S;E	0	0	.....	.....	Cloudy	
Tuscarora, La Paz, Mexico	29.67	753.6	73	22.8	76	24.4	82	S	.....	.....	2–3	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia. Villafranca, France	30.07‡	763 8‡	.....	.....	79	26.1	63	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass	30.12‡	765.0‡	.....	.....	62	16.7	100	NE	5	2.2	.....	.....	10	.....	Calm	0.05	1.3	.....	.....	Light rain	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From -	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. ———
S. S. China																			Capt. ———
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Seattle, W. T.																			Capt. Cobb.
S. S. City of Peking, N. 35° 56′, E. 149° 48′		30.39*	771.9*				Calm			0		Fog						Dense fog	Capt. Seabury.
S. S. City of Sydney		29.93†	760.2†	77	25.0	100	E	18	8.0			3		E		Mod'ate	E	D. clouds	Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 14° 46′, W. 94° 6′		29.90†	759.4†	85	29.4	79	NW			1		3		WSW	Blank	Mod'ate con fused.	SSW; SE	D clouds	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, San Francisco, Cal.		29.81†	757.2†	60	15.6	88	NW			1		0			0			Blue sky	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
———																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.76*	755.9*	86	30.0	76	Calm			0		k		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 35° 35′, E. 144° 50′		29.77†	756.1†	82	27.8	91	Var.			3		c		Var.	0	Smooth	SE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.
———																			

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.
———																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																		Captain Shackelford.	
S. S. Indiana, Philadelphia, Pa		29.98*	761.5*	75	23.9	??	Calm			0		10		SSE	Light			Clearing	Captain Sargent.
S. S. Ohio, Liverpool		30.15	765.8	68	20.0	84	SE			1		8		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania, N. 45° 34′, W. 52° 14′		30.25†	768.3†	55	12.8	93	NNE			3		1		NE	0	Light	NE	Clear	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 47′, W. 26° 35′		29.63*	752.6*				SSW	60	26.8			10		SW		Heavy	SW	Raining	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Ship John Light-house		29.59	759.2	79	26.1	86	Calm	0	0			2s		Calm	0			Clear	Capt. James Jorgensen.
Schooner Florence, Niantlic		29.85*	758.2*	43.8	6.6		Calm			0		10s			0			Foggy	O. T. Sherman.

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

Collated at the Office of the CHIEF SIGNAL OFFICER OF THE ARMY, Washington, D. C.

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 5, 1878.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.08	764.0	71.8	22.1	82	NE			3		1			0	0	Very fair	
Nemours			30.08	764.1	82.9	28.3	72	W			3		2			0	0	Fair	Kesxuche.
Algiers			30.02	762.6	82.0	27.8	63	NNE			3		0			0	0	Clear	Tourillere.
La Calle			30.02	762.5	78.3	25.7	87	NE			6		7			0.335	8.5	Very cloudy	Foufrede.
Tunis			29.99	761.8	80.6	27.0	71	ENE			3		0			0	0	Clear	Jacques.
Sfax			29.98	761.5	84.2	29.0		NW			5		5			0.157	4.0	Cloudy	Gau.
Saida			30.07	763.6	86.9	30.5	39	NNE			5		1			0	0	Very fair	Herbin.
Tebessa			29.99	761 7	69.8	21.0	41	N			8		5			0	0	Cloudy	Watrin.
Geriville			30.04	762.9	87.8	31.0	28	Calm			0		0			0	0	Clear	Brugniaux.
Laghouat			30.11	764.9	89.2	31.8	19	Calm			0		0			0	0	Clear	Bertrand.
Biskra			30.03	762.7	94.1	34.5	22	SE			1		4			0	0	Cloudy	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.63	752.7	30.16	766.1	78.3	25.7	59	E			2		5			0	0		Prof. Ivan Stozu.
Cracow, I. R. Observatory	29.51	749.6	30.26	768.7	70.2	21.2	67	NE			2		2			0	0		Dr. Wierzbiski
Eperies	29.36	745.7	30.21	767.4	71.6	22.0	56	NE			1		4cs			0	0		Julius Mikolik.
Gratz	28.98	736.0	30.19	766.8	70.7	21.5	79	SSE			2		0			0	0		Andreas Rospini.
Hermannstadt	28.74	729.9	30.17	766.2	75.6	24.2	63	SSE			2		5			0	0		Prof. A. Gottschling.
Kremtmünster	28.83	732 3	30.13	765.4	69.3	20.6	70	E			1		1			0	0		Prof. C. Wagner
Lemberg	29.26	743.2	30.23	767.7	67.8	19.9	70	N			1		5			0	0		Dr. T. Stanecki.
Pola	29.99	761.8	30.16	766.6	81.7	27.6	46	ESE			3		0			0	0		I.R.Hydrographic Office.
Szathmar	29.78	756.3	30.24	767.7	75.6	24.2	54	NW			2		2			0	0		Julius Csics, S. J.
Szegedin	29.91	759.8	30.19	766.7	77.4	25.2	69	N			2		0			0	0		Karl Stancel.
Trieste	30.03	762.8	30.13	765.4	80.2	26.8	44	ENE			2		0			0	0	Fair	P. Busin.
Vienna	29.49	749.0	30.18	766.6	75.6	24.2	58	SE			2		1			0	0		I. R. Central Met. Obs'y.

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

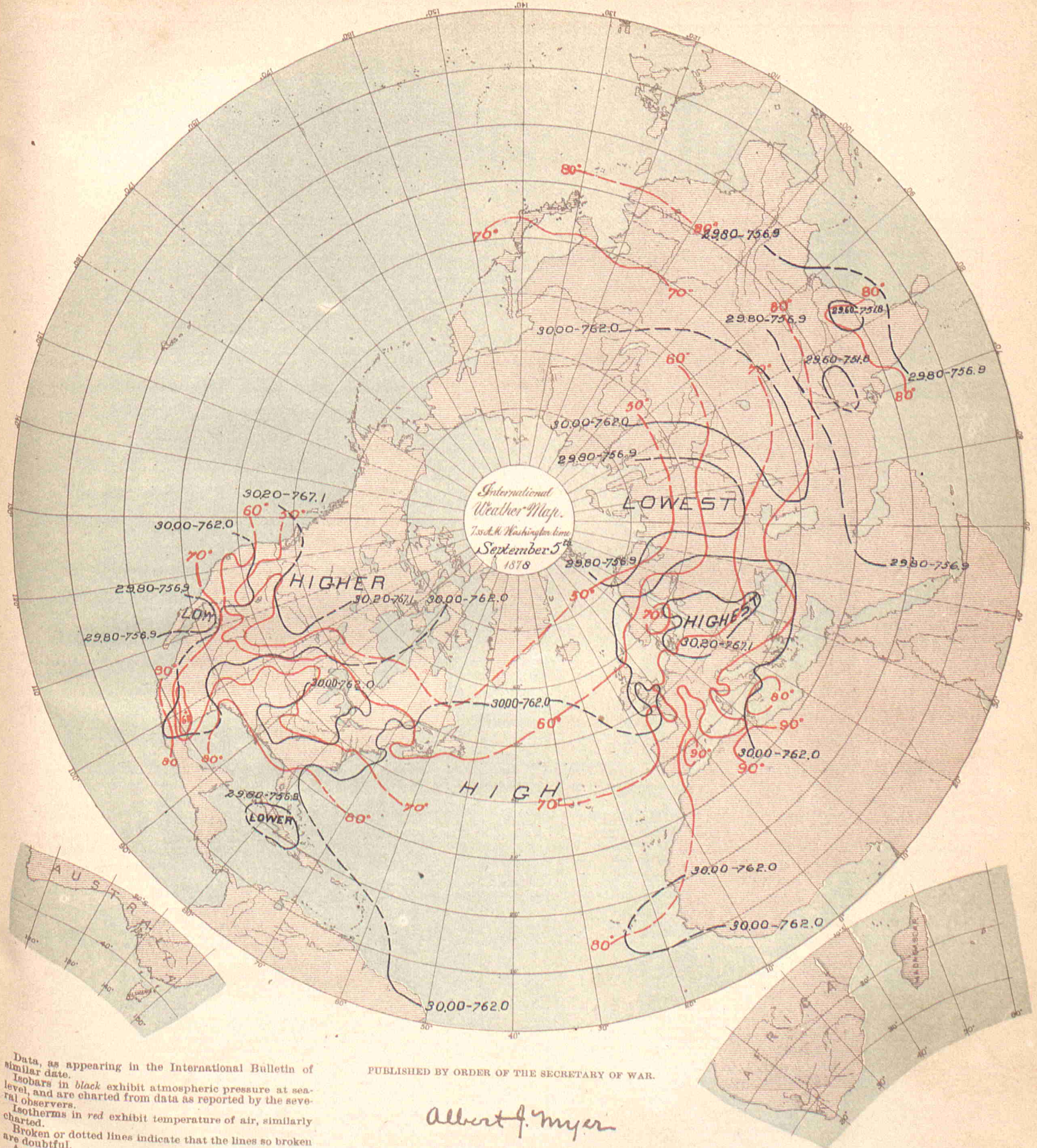
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.98	761.5	30.07	763.8	60.7	15.9		SSE	12	5.4			7			0	0	Misty	W. Boswell.
Ardrossan	29.98	761.5	30.00	762.0	67	19.4		Calm			0		5					Misty.	George Carrick.
Armagh, Observatory			30.02	762.5	64.4	18.0		NNE	3	1.3			5					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.99	761.7	69.5	20.8		SE	7	3.1			7					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.61	752.1	30.01	762.2	64.8	18.2		NE			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84	28.9		NE			1		3					D. clouds	Pvt. G. W. Roberts, A. [H.O.
Cambridge, Observatory			30.00	762.0	73.0	22.8		N			0		7					D. clouds	H. Todd.
Cardington			30.00	762.0	73.0	22.8		NE			1		8					Overcast	John McLaren.
Chatham, School M. E.	29.87	758.7	30.00	762.0	69.7	20.9		SW			1		9					Overcast	Lt. Cl.C.N. Martin, R. E.
Dartmoor	28.61	726.7	30.05	763.3	62.0	16.7		SE			3		5					Fine	Alexander Watt.
Donaghadee	29.98	761.5	30.01	762.2	61	16.1		SSE			1		10					Foggy	J. Mac Gowan.
Dover	29.98	761.5	30.01	762.2	66	18.9		WSW			1		7					Raining	J. Costello.
Eccles, (near Manchester)			29.97	761.2	73.8	23.2		SSW	0.8	0.4			7					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.80	756.9	30.03	762.7	67.0	19.4		ESE			1		7					Foggy	The Staff.
Fort Napier, (Natal)	27.52	699.0	29.83	757.7	77.0	25.0		NE			2		0					Blue sky	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.78	756.4	30.01	762.2	81	27.2		W			2		3					D. clouds	
Galway, Queen's College			29.95	760.7	67	19.4		WSW			1		2					Blue sky	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.08	764.0				NE			3		2					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.80	756.9	30.00	762.0	64.8	18.2		WSW			1		6					Foggy	D. G. Maclean.
Great Yarmouth	30.00	762.0	30.01	762.2	68	20.0		SE			2		3					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.83	757.7	30.00	762.0	70.3	21.3		SW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.78	756.4	30.00	762.0	65	18.3		ENE			1		8					Gloomy	Dr. S. E. Hoskins, F.R.S.
Helston			30.04	763.0	69	20.6		SW			1		2c			0	0	Fine	M. P. Moyle.
Holyhead	29.94	760.5	29.99	761.7	65	18.3		WNW			2		8					D. clouds	John Tilston.
Jersey	29.74	755.4	30.02	762.5	67.9	19.9		SSW			2		8			Blank	Blank	Hazy	J. Fisher.
Kew, Observatory	29.96	761.0	29.99	761.7	68.8	20.4		ENE	3	1.3			10					Misty	The Staff.
Kingstown	30.00	762.0	30.03	762.7	65	18.3		E			3		8					Overcast	George Mitchell.
Leicester, Museum			30.00	762.0	65.6	18.8		E			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.85	758.2	78	25.6		NE			1		4ck?					Overcast?	Sergt. Beckett.
Nairn	29.89	759.2	29.96	761.0	65	18.3		Calm			0		0					Clear	W. D. Penny.
Nassau, (Bahamas)			29.97	761.2	80.8	27.1		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.84	757.9	30.03	762.7	65.1	18.4		N			1		10cs;k		Calm	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.49	749.0	30.00	762.0	64.8	18.2		NE			2		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.99	761.7	70	21.1		Calm			0		9					Overcast	H.E. Bellamy.
Plymouth	29.92	760.0	29.99	761.7	69.8	21.0		S			2		10					Overcast	John Merrifield.
Roche's Point	29.96	761.0	30.00	762.0	68	20.0		E			2		5					Hazy	W. Kennedy.
Saint Ann's Head	29.83	757.7	29.99	761.7	67	19.4		Calm			0		1					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys.)			30.02	762.5	59.8	15.4		SE	20	8.9			2					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.02	762.5	82.0	27.8		NE			3		2					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.76	755.9	30.04	763.0	64.0	17.8		NE			1		10			0.01	0.3	Misty	W. F. Cooper.
Silloth Rectory	29.97	761.2	30.00	762.0	73.8	23.2	76	Calm			0		6			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.61	752.1	30.02	762.5	67.0	19.4		N			1							Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.85	758.2	30.06	763.5	68.1	20.1		E			0–1		10					Foggy	Rev. C.H. Griffith, F.M.S
Thurso			29.99	761.8	69	20.6		SE			2		3					Blue sky	John Trotter.
Truro, Royal Institution			30.02	762.5	75	23.9		NW			6		5					D. clouds	W. Newcombe.
Valencia, Observatory			29.99	761.7	63.7	17.6		SSE	13	5.8			10					Misty	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			30.04	763.0	55.0	12.8	81	SW			2		8ks			0	0	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.72	754.9	29.91	759.8	75.3	24.1	68	W	13.5	6.0		0	6		W	0	0	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	50.7	10.4	87	S	8	3.6			9			0	0	Lunar halo.	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

Marine Series. Vessels.	Bar. Corr. Inches	Millimeters	Reduced Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0—9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 40° 40′, W. 69° 15′			30.02	762.5	63	17.2		ENE			2		10			3		Foggy	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 37° 50′, W. 17° 25′			30.17	766.3	77	25.0					1		4			1	WNW	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N.
Schooner Traveller																			Capt. Alex. Simpson. [R.
Barque Virginia																			Capt. W. Spratly.

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



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.22	666.0	.....	.....	68.0	20.0	95	S	.....	.....	1	.....	8ks	.....	.....	0.3	8.	.....	Federico Maison
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

DANISH SERIES.

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

Copenhagen	30.21	767.2	30.25	768.4	66.6	19.2	73	S	.....	.....	2	.....	7	.....	.....	.....	.....	.....	.....
.....	30.15	765.8	30.17	766.3	71.6	22.0	64	E	.....	.....	4	.....	5	.....	.....	.....	.....	.....	.....
b, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
olm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
avn, (Faröe)	29.88	759.0	29.92	759.9	56.3	13.5	89	SSW	.....	.....	4	.....	9	.....	.....	.....	.....	.....	.....
vig	30.02	766.5	30.19	766.8	68.4	20.2	76	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

FRENCH SERIES.

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

Alençon, Normal School	29.56	750.7	30.11	764.7	70.2	21.2	87	SW	.....	.....	1	.....	5	.....	NE	0.004	0.1	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	30.05	763.3	30.13	765.3	86.0	30	36	SSW	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.52	749.9	30.06	763.4	79.9	26.6	42	SW	.....	.....	2	2c	.....	.....	.....	0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Oheux.
Beauvais, Normal School	29.75	755.6	30.02	762.6	77.8	25.3	51	S	.....	.....	1	.....	8	.....	SW	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.26	743.1	30.11	764 8	77.9	25.5	96	SSW	.....	.....	2	.....	5	.....	E	0	0	Cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.66	753.3	30.19	766.9	71.6	22	77	W	.....	.....	1	.....	2k	.....	SW	0.08	2.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.72	754.9	29.97	761.1	77.4	25.2	71	W	.....	.....	1	.....	1k	.....	W	0	0	.....	The Staff.
Carcassonne, Normal School	29.71	754.7	30.11	764.7	84.2	29	48	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.50	749.4	30.04	763.1	78.1	25.6	87	S	.....	.....	2	.....	3	N	N	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'	29.74	755.5	30.05	763.2	80.6	27.0	64	S	.....	.....	1	.....	2	S	S	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.75	730.3	30.04	762.9	82.4	28.0	33	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.25	743.0	30.10	764.5	71.6	22	66	SW	.....	.....	3	2c	.....	SW	.....	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	29.03	737.3	30.17	766.3	86.0	30.0	23	N	.....	.....	1	.....	2	SE	.....	0	0	¼ covered	M. Rina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.86	758.4	30.07	763.8	67.8	19.9	81	SW	.....	.....	6	.....	10	.....	SW	0.165	4.2	Covered	Mouillot, Director.
Le Mans, Normal School	29.73	755.2	30.03	762.8	74.7	23.7	67	S	.....	.....	3	.....	5	.....	S	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.21	742.0	30.10	764.6	69.8	21	65	NE	.....	.....	1	.....	5	.....	NE	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.12	765.1	30.15	765.9	72.0	22.2	84	SSW	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.04	737.6	30.05	763.2	72.5	22.5	55	SE	.....	.....	3	.....	2cs	.....	W	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.87	758.7	30.05	763.2	88.2	31.2	57	NW	.....	.....	1	2c	.....	NW	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.12	739.7	30.14	765.6	80.6	27	31	S	.....	.....	1	c	.....	S	S	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.37	644.4	.....	.....	60.8	16.0	50	W	.....	.....	2	.....	8	.....	W	0	0	Very cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.07	763.8	30.10	764.6	73.8	23.2	81	SW	.....	.....	3	.....	10	SW	SW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.93	760.3	30.02	762.4	72.7	22.6	76	E	.....	.....	1	.....	10	.....	SW	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.00	762.1	68.2	19.0	87	SW	.....	.....	2	.....	8	.....	SW	0.573	14.55	Very cloudy	M. H. Hercouet
Tarbes, Normal School	29.21	741.8	30.27	768.8	64.4	18	80	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	T. Hugnet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	757.6	29.85	758.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.83	21.	.....	L'Abbé Marchés.
Lyons	.....	.....	29.70	754.3	81.3	27.4	44	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.10	764.6	79.9	26.6	52	SW	.....	.....	1	.....	1	.....	.....	0	0	Slightly cl'dy	The Staff.
Mont-Louis	25.01	635.2	30.32	770.2	68.0	20.0	35	ENE	.....	.....	2	.....	3	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	30.14	765.5	77.0	25.0	73	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.7	30.03	762.7	77.0	25.0	63	S	.....	.....	2	.....	8	.....	SSW	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.17	766.2	78.8	26.0	53	SE	7.4	3.33	.....	.....	2	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.78	578.5	.....	.....	61.3	16.3	.....	SW	.....	.....	1	.....	8	.....	.....	0	0	Fair	Gen'l de Nansouty
Saint Maur, (near Paris)	29.87	758.6	30.04	762.8	77.4	25.2	62	S	.....	.....	1	.....	10	.....	.....	0.004	0.1	Covered	E. Renou.
Toulouse, Observatory	29.44	747.7	30.16	766.1	82.8	28.2	39	SE	.....	.....	2	.....	1	.....	.....	.....	.....	.....	The Staff.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Marquet.
Versailles	.....	.....	30.04	763.0	79.9	26.6	41	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Almost cov.	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.90	759.5	29.93	760.2	74.3	23.5	94	E	4.5	2.0	.....	9ck	.....	W	.....	.....	.....	Covered	Marc Decbevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.30	744.1	30.14	765.6	67.6	19.8	59	SE	.....	.....	2	.....	1	W	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	30.06	763.4	30.23	767.7	73.9	23.3	49	SE	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.75	755.6	30.28	769.2	74.3	23.5	47	SSE	.....	.....	3	.....	3	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.68	753.8	30.09	764.3	75.2	24.0	70	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Albert Senz.
Cassel	29.53	750.0	30.14	765.5	76.3	24.6	48	ESE	.....	.....	2	.....	5	E	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.88	758.9	30.04	763.0	78.4	25.8	55	SE	.....	.....	4	.....	3	.....	.....	0	0	.....	Director Lose.
Emden	30.01	762.2	30.04	763.1	73.4	23.0	56	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.78	756.3	30.12	765.1	75.7	24.3	.....	S	.....	.....	1	.....	3	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.73	729.8	30.14	765.5	66.9	19.4	76	SW	.....	.....	2	.....	3	SW	.....	0	0	.....	M. Wilhelm.
Hamburg	30.11	764.9	30.18	766.6	71 2	21.8	58	SE	.....	.....	5	.....	4	.....	.....	0	0	Fair	Captain F. Hegemann.
Kiel	30.19	766.7	30.20	767.1	70.0	21.1	83	ESE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	30.22	767.6	30.30	769.7	67.8	19.9	70	W	.....	.....	2	.....	2	.....	.....	0.008	0.2	.....	Prof. E. Luther.
Köslin	.....	.....	30.24	768.2	68.7	20.4	.....	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.78	756.4	30.19	766.7	76.8	24.9	47	ESE	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	30.22	767.5	30.26	768.7	65.1	18.4	85	NW	.....	.....	3–4	.....	2ks	.....	.....	.....	.....	.....	Reinbrecht and Skalweit
Neufahrwasser	30.30	769.5	30.31	769.9	66.2	19.0	80	NE	.....	.....	2	.....	4	.....	.....	0	0	.....	A. Lothes.
Posen	30.06	763.4	30.34	770.5	70.7	21.5	54	SE	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.59	751.5	30.11	764.9	76.5	24.7	61	SE	.....	.....	2	.....	6	SW	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.17	740.9	30.07	763.7	77.0	25.0	47	E	.....	.....	1	.....	2	W	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.52	749.9	30.05	763.2	77.0	25.0	54	SW	.....	.....	5	.....	2	.....	.....	0	0	.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.66	728.0	30.13	765.4	70.3	21.3	68	W	2.0	0.9	.....	.....	4ck	.....	W	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.26	768.6	30.30	769.6	72.3	22.4	62	SE	.....	.....	1	.....	3	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.63	752.5	30.00	761.9	87.1	30.6	.....	NE	.....	.....	4.5	.....	.....	.....	.....	.....	.....	Clear	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.64	752.8	29.69	754.0	88.5	31.4	65	SW	28?	12.5?	.....	.....	2	.....	.....	0	0	D. clouds	.....
Deesa	29.25	742.8	29.72	754.8	84.2	29.0	81	WNW	.....	.....	.....	.....	8	E	W	0	0	Thunder	.....
Bombay	29.70	754.4	29.74	755.3	81.9	27.7	89	SSW	7	3.1	.....	.....	10	.....	W	0.01	0.3	Overcast	.....
Poona	27.75	704.9	29.75	755 7	77.4	25.2	84	WSW	.....	.....	.....	.....	10	.....	WSW	0.05	1.3	Overcast	.....
Lahore	28.89	733.9	29.63	752.6	81.0	27.2	67	NE	2.1	0.9	.....	.....	2	.....	.....	0	0	Blue sky	.....
Belgaum	27.28	692.8	29.82	757.5	72.9	22.7	91	SW	2	0.9	.....	.....	10	.....	SW	0.03	0.8	Drizzling	.....
Roorkee	28.78	713.2	29.66	753.4	83.8	28.8	85	SE	5	2.2	.....	.....	3	.....	.....	0	0	Gloomy	.....
Agra	29.11	739.3	29.66	753.4	87.7	30.9	69	E	.....	.....	.....	.....	6	.....	W	0	0	.....	.....
Nagpur	28.64	727.6	29.68	753.9	80.3	26.8	86	NW	2.7	1.2	.....	.....	10	.....	.....	0.24	6.1	Overcast	.....
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allahabad	29.34	745.3	29.65	753.1	81.1	27.3	91	Calm	0.5	0.2	.....	.....	7	E	.....	0.76	19.3	D. clouds	.....
Patna	29.51	749.6	29.69	754.2	83.6	28.7	87	E	0.7	0.3	.....	.....	10	E	E	0	0	Overcast	.....
Hazaribagh	27.67	702.8	29.66	753.5	79.8	26.6	81	ESE	6.5	2.9	.....	.....	4	.....	E	0.03	0.8	Thunder storm	.....
Cuttack	29.61	752.1	29.69	754.2	83.5	28.6	79	SSW	2.2	1.0	.....	.....	3	.....	.....	0.53	13.5	D. clouds	.....
Calcutta (Alipore)	29.71	754.7	29.74	755.3	82.7	28.2	87	E	4.0	1.8	.....	.....	7	S	S	0	0	D. clouds	.....
Goalpara	29.38	746.1	29.76	756.0	81.3	27.4	78	WSW	1.9	0.8	.....	.....	5	.....	.....	0	0	D. clouds	.....
Chittagong	29.70	754.5	29.80	756.8	83.9	28.8	83	Calm	5.6	2.5	.....	.....	6	.....	.....	0	0	Misty	.....
Sibsagar	29.49	746.9	29.74	755.3	85.5	29.7	78	ENE	1.4	0.6	.....	.....	8	.....	.....	0.65	16.5	D. clouds	.....
Jubbulpore	28.35	720.1	29.71	754.5	81.8	27.7	75	S	3.2	1.4	.....	.....	10	.....	.....	0	0	Overcast	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.75	755.7	30.15	765.7	79.3	26.3	42	E	4.9	2.2	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.05	763.2	30.15	765.9	79.5	26.4	40	ESE	6.9	3.1	.....	.....	1	NE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.97	761.2	30.15	765.9	79.7	26.5	44	E	4.9	2.2	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.86	733.1	30.13	765.4	77.4	25.2	53	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.62	752.4	30.13	765.2	78.4	25.8	48	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.25	742.9	30.12	765.1	76.8	24.9	49	NNW	2.5	1.1	.....	.....	2	SW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.30	718.8	30.15	765.7	73.4	23.0	44	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.91	759.7	30.12	765.1	79.9	26.6	47	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.93	760.3	30.10	764.4	82.2	27.9	42	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.82	757.5	30.13	765.2	78.6	25.9	44	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.85	758.1	30.10	764.4	83.3	28.5	43	NE	.....	.....	6	.....	0	.....	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.97	761.3	30.06	763.4	79.3	26.3	59	WNW	6.9	3.1	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.10	764.4	30.14	765.6	72.3	22.4	63	NE	.....	.....	.....	.....	1	.....	.....	0	0	.....	Prof. Luigi Guid .
Urbino	28.64	727.4	30.15	765.7	70.9	21.6	27	NE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.85	758.2	30.02	762.5	88.5	31.4	28	N	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.84	757.9	30.03	762.8	85.6	29.8	40	NNE	.....	.....	2	.....	3	NE	.....	0.126	3.2	.....	Prof. L. Palmieri.
Lecce	29.74	755.5	29.99	761.7	84.2	29.0	46	N	17.4	7.8	.....	.....	1	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.86	758.4	30.04	763.1	83.5	28.6	60	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.14	740.1	30.03	762.7	79.5	26.4	68	NW	3.8	1.7	.....	.....	6	.....	.....	0.276	7.0	.....	Prof. F. D. Conti.
Palermo	29.74	755.3	29.98	761.5	77.9	25.5	64	E	9.8	4.4	.....	.....	7	.....	.....	0.339	8.6	.....	Prof. G. Cacciatore.
Syracuse	29.89	759.3	29.97	761.2	73.4	23.0	80	E	6.9	3.1	.....	.....	8	E	.....	0.413	10.5	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.52	749.8	30.08	763.9	85.6	29.8	50	E	0	0	.....	.....	2	NE	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.68	753.9	29.88	759.9	74.0	23.3	76	NE	5.1	2.3	.....	.....	0	.....	.....	0	0	Clear	
Tokei (Yeddo) Observatory	29.69	754.1	29.76	755.9	69.8	21.1	96	NNW	4.0	1.8	.....	.....	10ns	.....	.....	0.065	1.65	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	29.64	752.8	29.74	755.4	69.5	20.8	100	NW	4	1.8	.....	.....	10	.....	.....	0.70	17.78	Cloudy	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Cuernavaca	.....	.....	.....	.....	64.4	18.0	82	N	.....	.....	2	10ck	0	.....	.....	0.055	1.4	Very cloudy	P. Ceballos.
Guadalajara	25.04	635.9	29.98	761.5	59.0	15.0	90	SE	.....	.....	1	0	9ks	.....	SE	0.742	18.8	Very cloudy	Prof. L. Perez.
Guanajuato	23.69	601.9	29.83	757.9	63.3	17.4	73	E	.....	.....	.....	0	10	.....	.....	0	0	Covered	F. Ortiz.
Leon	24.42	620.2	29.94	760.4	64.4	18.0	93	NW	.....	.....	1	1c	1k	NW	Calm	0	0	Clear	Prof. M. Leal.
Mexico	23.10	586.7	30.09	764.3	55.8	13.2	88	NW	0.9	0.4	.....	0	10k	.....	.....	0.87	22.0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.7	16.5	95	Calm	.....	.....	0	0	10kn	.....	.....	0	0	Covered	M. V. de Leon, M. E
Puebla	24.42	594.8	30.08	764.1	56.5	13.6	94	NNE	.....	.....	.....	5n	5ns	.....	.....	2.44	61.76	Covered	Prof. B. Gonzalez.
Tlacotalpam	29.88	759.0	29.89	759.3	77.0	25	91	SW	.....	.....	1	0	0	.....	.....	0	0	Foggy	M, M. Cházaro.
San Luis Potosi	24.27	615.8	30.19	766.7	61.0	16.1	41	E	3.1?	0.4?	.....	.....	10	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.88	759.1	29.91	759.7	78.8	26.0	84	NW	.....	.....	.....	3ck	3ks	.....	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	49.1	9.5	76	NE	.....	.....	1	3	3	SW	E	0	0	Fair	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.4	30.00	762.0	55.4	13.0	92	E	0	0	.....	.....	10	.....	S	2.072	52.6	Covered	Prof. P. Spina, [M.M.D.D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.32	719.2	29.94	760.4	78.1	25.6	80	Calm	0	0	.....	0	5	.....	SW	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.02	762.4	30.02	762.4	73.8	23.2	.....	ESE	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.00	762.1	30.06	763.5	71.6	22.0	.....	ESE	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Helder	30.01	762.2	30.01	762.2	70.5	21.4	.....	E	.....	.....	2	.....	.....	.....	.....	0.098	2.5	.....	
Hellevoetsluis	30.00	762.1	30.00	762.1	73.4	23.0	75	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.99	761.7	30.04	762.9	74.7	23.7	61	SSE	.....	.....	3	.....	2	.....	.....	0	0	Light cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	30.13	765.4	30.19	766.8	66.9	19.4	63	S	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.00	762.0	30.04	763.0	53.6	12.0	98	SW	18	8	.....	.....	10	.....	.....	0.693	17.6	Light rain	
Christiania	30.02	762 6	30.17	766.2	70.9	21.6	59	WSW	4	2	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.71	754.6	29.75	755.7	52.9	11.2	83	SW	27	12	.....	.....	10	.....	.....	0.236	6.0	Raining	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.90	759.5	30.09	764.3	70.9	21.6	89	S	2.5	1.1	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.11	739.5	30.11	764.8	75.2	24.0	42	W	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.0	30.09	764.2	79.2	26.2	57	SW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.8	30.14	765.6	75.6	24 2	69	S	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.08	763.9	30.14	765.6	77.0	25.0	71	S	13.0	5.8	.....	.....	5	.....	.....	0	0	.....	

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

Naval Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 35′, W. 26° 60′	.....	.....	30.09	764.3	74.8	23.8	.....	S	.....	.....	5	.....	6	E	S	5	.....	D. clouds	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	29.97	761.3	68.0	20.0	.....	WSW	.....	.....	2	.....	3	.....	WSW	2	WSW	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.98	761.5	80.4	26.9	.....	ENE	.....	.....	3	.....	3	.....	NE	2	S	D. clouds	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.95	760.8	77.0	25.0	.....	WNW	.....	.....	1	.....	10	.....	Calm	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.84	757.8	87.8	31.0	.....	SW	.....	.....	1	.....	3	.....	SW	0	.....	Thunder; lightn'g	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.87	758.8	30.29	769.4	68.9	20.5	57	WNW	2	1	.....	.....	6ks;k	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.85	758.3	30.27	768.8	64.9	18.3	75	WNW	2	1	.....	.....	6	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.95	760.6	30.18	766.6	64.2	17.9	60	NW	4	2	.....	.....	4k;cs	.....	.....	.....	.....	.....	Prof. Dr. Welbrauch.
St. Petersburg	30.05	763.3	30.07	763.7	62.4	16.9	77	NW	18	8	.....	.....	8cs;s	.....	.....	.....	.....	Light clouds	Central Physical Obs.
Knopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.56	750.7	30.17	766.4	64.6	18.1	66	NNW	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.15	765.7	30.22	767.5	72.0	22.2	54	NNW	22	10	.....	.....	5kn	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.15	765.9	30.17	766.4	76.5	24.7	62	NNW	9	4	.....	.....	1	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.49	749.1	30.03	762.8	62.4	16.9	69	N	13	6	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.82	757.3	30.01	762.3	75.6	24.2	37	WSW	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.87	758.8	29.89	759.3	49.8	9.9	89	WNW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.62	726.9	29.96	760.9	85.5	29.7	33	NW	18	8	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.00	761.9	29.91	759.8	80.8	27.1	54	WSW	7	3	.....	.....	5k	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.31	744.5	29.77	756.2	64.2	17.9	63	NW	11	5	.....	.....	6k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.49	749.1	29.75	755.7	66.4	19.1	72	WSW	9	4	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.72	729.5	29.63	752.7	62.2	16.8	66	WSW	22	10	.....	.....	7n;k;ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.80	756.9	30.02	762.6	77.9	25.5	35	NNE	11	5	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.51	724.1	30.17	766.2	71.2	21.8	62	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.63	752.6	30.14	765.6	58.5	14.7	52	NW	0	0	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.85	758.2	30.14	765.6	50.7	10.4	84	SW	2	1	.....	.....	9	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.75	755.7	29.89	759.3	69.6	20.9	97	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 494.2? m., or 1,621.3? ft.; Irkutsk, 502 m., or 1,286 ft.; Nertchinsk, 592.0? m., or 1,942.2? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	30.01	762.2	30.11	764.8	79.9	26.6	65	SE	1.8	0.8	.....	1ck	5	SW	.....	0	0	Misty	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.07	763.8	30.13	765.2	79.2	26.2	68	NW	2.3	1.02	.....	.....	10	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.22	691.3	.....	.....	78.8	26.0	66	W	4.1	1.84	.....	.....	6	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.92	709.1	30.04	763.0	90.2	32.4	39	SW	6.0	2.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.95	760.8	30.10	764.4	88.2	31.2	44	ENE	3.2	1.42	.....	.....	.....	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.22	742.1	30.09	764.3	69.6	20.9	74	SSW	11.0	4.86	.....	.....	8	.....	.....	0.031	0.8	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.83	757.6	29.89	759.3	82.3	27.9	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.00	762.1	30.10	764.5	87.4	30.8	40	E	15.9	7.1	.....	2	2	NW	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.86	758.4	29.95	760.7	83.1	28.4	86	SE	6.4	2.88	.....	6s	2ic	SE	SE	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.85	758.1	29.89	759.1	60.4	15.8	.....	W	.....	.....	2	.....	3	.....	.....	0	0	.....	
Umea	29.95	760.8	30.00	762.1	62.6	17 0	66	WNW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	30.08	764.1	30.13	765.4	69.4	20.8	53	W	.....	.....	4	.....	8	.....	.....	0	0	.....	
Stockholm	30.04	762.9	30.21	767.4	70.2	21.2	67	W	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	30.10	764.4	30.15	765.9	63.7	17.6	86	NW	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.11	764.8	30.19	766.7	73.0	22.8	55	WSW	8.3	3.7	.....	.....	1	.....	SW	0.004	0.09	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.75	730.2	30.13	765.2	70.5	21.4	70	N	.....	.....	1	.....	2	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.67	725.3	30.13	765.3	72.7	22.6	66	W	.....	.....	1	.....	2	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.8 mm.; Thermometer, +1.8 cent.; Relative Humidity, +10 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.00	764.2	77.2	25.1	65	ENE	20	13.0	.....	.....	2	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.13	765.4	88.2	31.2	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.71	754.6	29.53	757.6	88.9	31.6	61	NW	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

CANADIAN SERIES.

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

Bathurst, N. B	29.99	761.7	30.06	763.5	63.1	17.3	87	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.67	753.6	29.96	761.0	67	19.4	.....	E	1	0.4	.....	.....	8s	.....	E	0.27	6.9	Cloudy	W. R. Bigg.
*Chatham, N B	30.05	763.2	30.11	764.8	58	14.4	92	W	1	0.4	.....	2c	0	W	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.10	764.5	30.14	765.5	62	16.7	87	SW	5	2.2	.....	0	5ks	.....	Calm	0	0	Fair	H. J. Cundall, C. E
Cornwall, Ontario	29.77	756.1	29.96	761.0	65.4	18.6	95	NW	.....	.....	1	.....	10s	.....	.....	0.409	10.39	Overcast	James Smith, M. A.
Dalhousie, N. B	29.90	759.4	30.06	763.5	57.2	14.0	94	W	.....	.....	1	.....	.....	.....	.....	0	0	Overcast	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	W. H. Bevis.
*Father Point, Quebec	29.96	761.0	29.98	761.5	65	18.3	78	S	20	8.9	.....	5k	Haze	W	Calm	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.08	764.0	30.15	765.8	61.1	16.2	88	SE	4	1.8	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.33	745.0	30.15	765.8	53	11.7	90	NE	14	6 3	.....	5k	5ks	W	Calm	0.140	3.56	Cloudy	James Stewart.
Granton, Ontario	28.92	734.6	29.99	761.7	63	17.2	100	N	.....	.....	1	0	0	.....	.....	0.25	6.3	Foggy	James Grant.
*Halifax, N. S	29.98	761.5	30.11	764.8	60	15.6	97	SE	3	1.3	.....	.....	8ks	.....	SE	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.65	753.1	30.01	762.2	64.5	18 1	93	SW	.....	.....	3	10c	.....	SE	.....	0.06	1.5	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	30.14	765.5	30.16	766.1	55	12.8	68	W	.....	.....	3	2c	2ks	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.66	753.1	29.97	761.2	67	19.4	93	NE	4	1.8	.....	.....	8ks	.....	NE	1.02	25.9	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.12	765.0	30.16	766.1	60.0	15.6	75	W	4	1.8	.....	2c	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.75	756.7	29.99	761.7	65	18.3	84	S	6	2.7	.....	2cs	0	.....	.....	Inap.	Inap.	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	29.32	744.7	30.00	762.0	65	18.3	97	E	3	1.3	.....	2ck	0	NE	.....	0.07	1.8	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.25	742.9	29.98	761.5	67.7	19.8	89	NE	.....	.....	1	6k	0	.....	.....	1.84	46.7	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.32	744.7	30.00	762.0	61	16.1	94	N	7	3.1	.....	.....	Fog	.....	N	1.13	28.7	Foggy	H. Morgan.
Port Hastings, N. S	30.11	764.8	30.16	766.1	57.3	14.1	.....	SW	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.37	746.0	30.00	762.0	64	17.8	94	NW	4	1.8	.....	0	0	.....	.....	0.03	0.8	Clear	M. Payne.
*Quebec, Quebec	29.74	755 4	30.06	763.5	63	17.2	89	Calm	.....	.....	0	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.55	750.6	30.00	762.0	64	17.8	94	W	3	1.3	.....	.....	8s	.....	S	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.05	763.3	30.10	764.5	58	14.4	93	SE	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	29.98	761.5	30.14	765.5	59	15.0	88	E	4	1.8	.....	.....	10ks	.....	.....	.....	.....	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.30	744.2	29.99	761.7	65	18.3	93	SE	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	K. Stewart.
Stayner, Ontario	29.23	742.4	29.98	761.5	68	20.0	92	Calm	0	0	.....	2k	0	N	.....	0.12	3.0	Fair	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.00	762.0	58.9	14.9	99	NW	2	0.9	.....	.....	Fog	.....	.....	0.726	18.44	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.15	765.8	30.17	766.3	60	15.6	73	SW	3	1.3	.....	2c	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.62	752.3	29.99	761.7	65	18.3	94	N	4	1.8	.....	2cs	2ks	N	NE	0	0	Fair	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	58.0	14.4	70	SW	.....	.....	.....	1c	1s	.....	.....	0	0	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0 10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.75	755.6	29.97	761.2	63	17.2	94	NE	4	1.8	.....	.....	10n	.....	Calm	2.28	57.9	Light rain...	
Alpena, Michigan	29.37	746.0	30.00	762.0	62	16.7	88	NW	6	2.7	.....	0	Haze	.....	.....	0	0	Clear.....	
Atlantic City, New Jersey	29.90	759.4	29.92	760.0	74	23.3	95	NW	5	2.2	.....	10k	0	N	.....	0.77	19.6	Cloudy.....	
Augusta, Georgia	29.80	756.9	29.97	761.2	77	25.0	91	Calm	0	0	.....	5c	2s;fg	W	Calm	0	0	Fair.....	
Baltimore, Maryland	29.90	759.4	29.95	760.7	71	21.7	85	N	4	1.8	.....	5k	Sm'e	NE	Calm	0	0	Fair.....	
Barnegat, New Jersey	29.90	759.4	29.92	760.0	68	20.0	95	N	8	3.6	.....	.....	10s	.....	N	2.20	58.2	Cloudy.....	
Bismarck, Dakota	28.28	718.3	30.13	765.3	51	10.6	100	NE	8	3.6	.....	.....	10n	.....	N	0.04	1.0	Light rain...	
Boerne, Texas	28.40	721.3	.....	.....	73	22.8	90	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy.....	
Boise City, Idaho	27.23	691.6	30.19	766.8	57	13.9	69	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Boston, Massachusetts	29.88	758.9	30.03	762.7	62	16.7	100	E	12	5.4	.....	.....	Fog	.....	E	0.75	19.1	Dense fog...	
Brackettville, Texas	28.80	731.5	29.78	756.4	76	24.4	82	E	1	0.4	.....	2c	0	Calm	.....	0	0	Clear.....	
Breckenridge, Minnesota	28.93	734.8	29.90	759.4	59	15.0	100	N	11	4.9	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy.....	
Brownsville, Texas	29.97	761.2	30.04	763.0	78	25.6	86	Calm	0	0	.....	5k	0	Calm	.....	0	0	Fair.....	
Buffalo, New York	29.27	743.4	29.94	760.5	65	18.3	100	Calm	0	0	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Burkes, Arizona	.....	.....	.....	.....	83	28.3	50	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Burlington, Vermont	29.79	756.7	30.04	763.0	68	20.0	74	S	3	1.3	.....	.....	10s	.....	S	0.04	1.0	Cloudy.....	
Cairo, Illinois	29.62	752.3	30.00	762.0	70	21.1	80	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Camp Apache, Arizona	.....	.....	.....	.....	62	16.7	77	N	.....	.....	1	2k	0	NE	.....	0	0	Fair.....	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	65	18.3	63	NW	.....	.....	1	0	8s	.....	W	0	0	Cloudy.....	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	67	19.4	89	Calm	.....	.....	0	2k	Fog	Calm	.....	0.59	15.0	Fair.....	
Campo, California	27.38	695.4	29.95	760.7	41	5.0	75	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Cape Hatteras, N. Carolina	29.94	760.5	29.95	760.7	79	26.1	87	NW	1	0.4	.....	.....	0	8ks	.....	NW	0.08	2.0	Fair.....
Cape Henry, Virginia	29.89	759.2	29.92	760.0	77	25.0	91	Calm	0	0	.....	.....	0	5s	.....	SW	1.17	29.7	Fair.....
Cape Lookout, N. Carolina	29.94	760.5	29.95	760.7	78	25.6	91	NW	12	5.4	.....	10k	0	W	.....	0	0	Cloudy.....	
Cape May, New Jersey	29.92	760.0	29.95	760.7	72	22.2	85	N	12	5.4	.....	8k	0	W	.....	0.80	20.3	Cloudy.....	
Castroville, Texas	29.14	740.1	29.82	757.4	74	23.3	86	N	2	0.9	.....	.....	10s	.....	N	0	0	Cloudy.....	
Charleston, South Carolina	29.95	760.7	30.01	762.2	79	26.1	91	W	2	0.9	.....	8c;cs	0	SW;Calm	.....	0	0	Fair.....	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	44	6.7	92	N	4	1.8	.....	.....	10s	.....	Calm	0.07	1.8	Threatening	
Chicago, Illinois	29.36	745.7	30.03	762.7	64	17.8	83	SW	5	2.2	.....	2cs	Fog	Calm	.....	0	0	Fair.....	
Cincinnati Ohio	29.39	746.5	30.02	762.5	68	20.0	84	SW	2	0.9	.....	.....	Fog	.....	Calm	0	0	F ogg.....	
Cleveland, Ohio	29.30	744.2	29.99	761.7	70	21.1	75	NW	10	4.5	.....	5k	0	NW	.....	0.12	3.0	F a	
Coleman City, Texas	28.18	715.8	29.78	756.4	70	21.1	85	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear.....	
Columbus, Ohio	29.20	741.7	30.02	762.5	61	16.1	88	W	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy.....	
Concho, Texas	28.06	712.7	29.66	753.4	70	21.1	79	Calm	0	0	.....	5k	0	SE	.....	0	0	Fair.....	
Corsicana, Texas	29.52	749.8	29.97	761.2	70	21.1	95	SE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Davenport, Iowa	29.43	747.5	30.05	763.3	68	20.0	79	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.85	732.8	29.98	761.5	71	21.7	90	SE	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy.....	
Denison, Texas	29.19	741.4	29.97	761.2	70	21.1	95	SE	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy.....	
Denver, Colorado	24.92	633.0	30.14	765.5	49	9.4	85	N	4	1.8	.....	.....	10s	.....	Calm	0.38	9.7	Cloudy.....	
Des Moines, Iowa	29.12	739.6	29.95	760.7	76	24.4	69	S	1	0.4	.....	0	Haze	.....	Calm	0	0	Hazy	
Detroit, Michigan	29.36	745.7	30.01	762.2	64	17.8	89	Calm	0	0	.....	.....	2s	.....	W	0.02	0.5	Fair.....	
Dodge City, Kansas	27.45	697.2	29.64	752.8	70	21.1	85	W	4	1.8	.....	0	8ks	.....	SE	0	0	Cloudy.....	
Dubuque, Iowa	29.34	745.2	30.01	762.2	66	18.9	74	S	1	0.4	.....	Haze	Fog	S	Calm	0	0	Fair.....	
Duluth, Minnesota	29.27	743.4	29.92	760.0	68	20.0	90	NE	7	3.1	.....	.....	10s	.....	NE	0.08	2.0	Cloudy.....	
Eagle Pass, Texas	29.16	740.7	29.87	758.7	74	23.3	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Eastport, Maine	30.05	763.3	30.12	765.0	56	13.3	94	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Edinburg, Texas	.....	.....	.....	.....	76	24.4	91	S	.....	.....	1	.....	2s	.....	.....	0	0	Fair.....	
El Paso, Texas	.....	.....	.....	.....	74	23.3	74	Calm	0	0	.....	0	0	.....	.....	0.08	2.0	Clear.....	
Erie, Pennsylvania	29.27	743.4	29.96	761.0	68	20.0	84	N	5	2.2	.....	5k	0	N	.....	0.20	5.1	Fair.....	
Escanaba, Michigan	29.38	746.2	30.01	762.2	64	17.8	83	NW	2	0.9	.....	.....	10s	.....	NW	0	0	Cloudy.....	
Florence, Arizona	28.40	721.3	30.00	762.0	73	22.8	85	Calm	.....	.....	0	0	5ks	.....	W	0.70	17.8	Fair	
Fort Craig, New Mexico	25.53	648.4	29.59	751.6	63	17.2	88	Calm	0	0	.....	5c	0	S	.....	0.01	0.3	Fair	
Fort Davis, Texas	25.23	640.8	30.19	766.8	67	19.4	56	Calm	0	0	.....	.....	10ks	.....	SW	0.64	16.3	Cloudy.....	
Fort Gibson, Indian Ter	29.45	748.0	29.96	761.0	71	21.7	85	E	1	0.4	.....	0	Haze	.....	Calm	0	0	Hazy.....	
Fort Griffin, Texas	28.71	729.2	29.94	760.5	69	20.6	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort McKavett, Texas	27.82	706.6	29.66	753.4	75	23.9	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.86	758.4	71	21.7	71	Calm	0	0	.....	Haze	Haze	.....	Calm	0	0	Hazy.....	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	29.89	759.2	29.93	760.2	80	26.7	87	S	16	7.2	.....	0	8ks	.....	SE	0.73	18.5	Light rain...	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.40	746.7	30.03	762.7	63	17.2	83	Calm	0	0	.....	2k	0	NW	.....	0	0	Fair.....	
Indianapolis, Indiana	29.28	743.7	30.03	762.7	64	17.8	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Indianola, Texas	29.89	759.2	29.92	760.0	81	27.2	87	S	14	6.3	.....	2cs	5s	Calm	Calm	0.12	3.0	Cloudy.....	
Jacksboro, Texas	28.85	732.8	29.94	760.5	71	21.7	85	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Jacksonville, Florida	29.94	760.5	29.97	761.2	82	27.8	91	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair.....	
Keokuk, Iowa	29.40	746.7	29.99	761.7	70	21.1	66	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Key West, Florida	29.88	758.9	29.92	760.0	84	28.9	79	NE	6	2.7	.....	2c;k	2ks	Calm;E	E	0.77	19.6	Fair.....	
Kittyhawk, North Carolina	29.92	760.0	29.94	760.5	76	24.4	91	E	5	2.2	.....	2ck	0	NW	.....	0	0	Fair	
Knoxville, Tennessee	29.04	737.6	30.00	762.0	71	21.7	80	Calm	0	0	.....	.....	0	.....	.....	0	0	Clear.....	
La Crosse, Wisconsin	29.25	742.9	29.95	760.7	63	23.0	84	S	8	3.6	.....	.....	0	.....	.....	0	0	Clear.....	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	63	17.2	83	Calm	0	0	.....	.....	0	.....	.....	0.19	4.8	Clear.....	
Laredo, Texas	29.48	748.8	29.80	756.9	79	26.1	82	SE	4	1.8	.....	5k	0	Calm	.....	0	0	Fair.....	
Lead City, Dakota	24.95	633.7	30.22	767.6	45	7.2	92	N	1	0.4	.....	.....	Fog	.....	.....	0.45	11.4	Foggy	
Leavenworth, Kansas	29.13	739.9	29.94	760.5	72	22.2	76	Calm	0	0	.....	5ck	0	S	.....	0	0	Fair.....	
Los Angeles, California	29.58	751.3	29.91	759.7	62	16.7	85	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Louisville, Kentucky	29.50	749.3	30.04	763.0	66	18.9	79	N	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Smoky.....	
Lynchburg, Virginia	29.32	744.7	29.97	761.2	73	22.8	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Marquette, Michigan	29.26	743.2	29.93	760.2	69	20.6	85	SE	4	1.8	.....	.....	10n	.....	Calm	0.06	1.5	Light rain...	
Mason, Texas	28.33	719.6	30.02	762.5	74	23.3	81	E	1	0.4	.....	.....	10s	.....	E	0	0	Cloudy.....	
Memphis, Tennessee	29.72	754.9	30.02	762.5	69	20.6	75	NE	4	1.8	.....	5c	0	SW	.....	0	0	Fair.....	
Milwaukee, Wisconsin	29.32	744.7	30.03	762.7	64	17.8	89	SW	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	
Mobile, Alabama	29.96	761.0	30.00	762.0	76	24.4	91	N	4	1.8	.....	.....	10s	.....	Calm	0.28	7.1	Threatening	
Montgomery, Alabama	29.76	755.9	29.93	760.5	75	23.9	76	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Morgantown, West Virginia	28.98	736.1	30.00	762.0	67	19.4	79	S	1	0.4	.....	.....	10s;fg	.....	SW;Calm	0	0	Cloudy.....	
Mt. Washington, N. H.	23.96	608.6	30.32	770.1	48	8.9	100	S	10	4.5	.....	.....	Fog	.....	S	0	0	Foggy	
Nashville, Tennessee	29.53	750.0	30.05	763.3	63	20.0	79	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
New Haven, Connecticut	29.81	757.2	29.92	760.0	64	17.8	94	NE	14	6.3	.....	.....	10n	.....	Calm	6.49	164.8	Heavy rain..	
New London, Connecticut	29.91	759.7	29.96	761.0	67	19.4	95	E	14	6.3	.....	.....	10n	.....	E	0.97	1.8	Light rain...	
New Orleans, Louisiana	29.94	760.5	29.99	761.7	79	26.1	82	NE	5	2.2	.....	.....	10s	.....	Calm	0.96	24.4	Cloudy.....	
Newport, Rhode Island	29.92	760.0	29.97	761.2	68	20.0	90	E	11	4.9	.....	.....	10ks	.....	NE	0.02	0.5	Threatening	
New York, New York	29.75	755.6	29.92	760.0	68	20.0	84	N	1	0.4	.....	0	8s	.....	N	2.17	55.1	Clearing.....	
Norfolk, Virginia	29.89	759.2	29.95	760.7	76	24.4	91	NW	1	0.4	.....	5ck	0	NW	.....	0.20	5.1	Fair.....	
North Platte, Nebraska	27.15	689.6	29.66	753.4	58	14.4	94	NE	8	3.6	.....	.....	10n	.....	NE	0.17	4.3	Light rain...	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	44	6.7	100	E	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog...	
Omaha, Nebraska	28.89	733.8	29.92	760.0	70	21.1	80	S	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear.....	
Oswego, New York	29.64	753.4	29.97	761.2	67	19.4	89	S	5	2.2	.....	0	5ks	.....	S	0.54	13.7	Fair.....	
Pembina, Dakota	29.28	743.7	30.10	764.5	52	11.1	100	N	7	3.1	.....	.....	10s	.....	W	0.10	2.5	Cloudy.....	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.91	759.7	29.96	761.0	68	20.0	90	N	5	2.2	.....	.....	10s	.....	NE	0.29	7.4	Cloudy	
Phœnix, Arizona	28.70	729.0	.....	.....	75	23.9	77	E	.....	.....	2	0	2s	.....	NE	0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	27	— 2.8	100	SW	10	4.5	.....	.....	10n	.....	Calm	0.49	12.4	Light snow.	
Pioche, Nevada	24.12	612.6	29.89	759.2	48	8.9	70	S	2	0.9	.....	0	0	.....	.....	6	0	Clear	
Pittsburg, Pennsylvania	29.18	741.2	29.96	761.0	66	18.9	89	NW	5	2.2	.....	10k	0	NW	.....	0.02	0.5	Cloudy	
Port Huron, Michigan	29.35	745.5	29.99	761.7	67	19.4	89	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.03	762.7	30.08	764.0	60	15.6	94	E	8	3.6	.....	.....	10n;fg	.....	Calm	Inap	Inap.	Light rain	
Portland, Oregon	29.98	761.5	30.08	764.0	55	12.8	81	NW	2	0.9	.....	0	Fog	.....	SE	0	0	Clear	
Prescott, Arizona	24.79	629.6	30.15	765.8	53	11.7	86	Calm	0	0	.....	0	0	.....	.....	0.03	0.8	Clear	
Pilot Point, Texas	29.25	742.9	30.05	763.3	73	22.8	85	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	81	27.2	83	E	4	1.8	.....	5cs	0	Calm	.....	1.93	49.0	Fair	
Red Bluff, California	29.50	749.3	29.84	757.9	69	20.6	31	NW	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.95	760.7	81	27.2	55	SE	3	1.3	.....	1ck	0	SE	.....	0	0	Clear	
Rochester, New York	29.35	745.5	29.94	760.5	65	18.3	94	SW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Cloudy	
Roseburg, Oregon	29.48	748.8	30.05	763.3	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.75	755.6	29.83	757.7	62	16.7	56	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.50	749.3	30.06	763.5	69	20.6	70	SE	4	1.8	.....	0	Sm'e	.....	.....	0	0	Clear	
St. Marks, Florida	29.95	760.7	29.96	761.0	76	24.4	95	N	4	1.8	.....	2c	0	Calm	.....	0.05	1.3	Fair	
St. Paul, Minnesota	29.08	738.6	29.87	758.7	70	21.1	79	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.70	652.8	30.03	762.7	56.5	13.6	84	E	2	0.9	.....	.....	10s	.....	W	0.33	8.4	Cloudy	
San Antonio, Texas	29.23	742.4	29.79	756.7	76	24.4	91	NW	2	0.9	.....	.....	8s	.....	NE	Inap	Inap.	Cloudy	
San Diego, California	29.86	758.4	29.94	760.5	63	17.2	89	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.36	745.7	30.01	762.2	68	20.0	90	NW	5	2.2	.....	2c	2ks;sm	N	Calm	Inap.	Inap.	Fair	
Sandy Hook, New Jersey	29.89	759.2	29.92	760.0	68	20.0	90	N	18	8.0	.....	.....	10ks	....	N	2.06	52.3	Cloudy	
San Francisco, California	29.83	757.7	29.89	759.2	55	12.8	90	SW	8	3.6	.....	0	Fog	....	SW	0	0	Fair	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	50	10.0	72	E	2	0.9	.....	2cs	0	Calm	.....	0.81	20.6	Fair	
Savannah, Georgia	29.91	759.7	30.00	762.0	77	25.0	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.38	9.7	Foggy	
Shreveport, Louisiana	29.80	756.9	30.01	762.2	72	22.2	100	E	4	1.8	.....	.....	10s	.....	E	0.22	5.6	Cloudy	
Silver City, New Mexico	24.31	617.5	.....	.....	56	13.3	80	SW	1	0.4	.....	0	0	....	.....	0	0	Clear	
Smithville, North Carolina	29.96	761.0	29.99	761.7	78	25.6	91	W	3	1.3	.....	2c	1ks	W	SW	0.06	1.5	Fair	
Springfield, Massachusetts	29.87	758.7	30.00	762.0	63	17.2	94	NE	5	2.2	.....	.....	10n	.....	NE	0.30	7.6	Light rain	
Stockton, Texas	26.94	684.3	29.94	760.5	68	20.0	47	Calm	0	0	.....	5k	0	Calm	.....	0.02	0.5	Fair	
Thatcher's Island, Mass	29.99	761.7	30.05	763.3	61	16.1	100	E	6	2.7	.....	.....	Fog	.....	.....	0.01	0.3	Foggy	
Toledo, Ohio,	29.36	745.7	30.02	762.5	65	18.3	84	W	2	0.9	.....	0	2ks;hz.	.....	Calm	0	0	Fair	
Tucson, Arizona	27.25	692.1	29.80	756.9	74	23.3	82	SE	3	1.3	.....	5k	2s	Calm	Calm	0.05	1.3	Fair	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	79	26.1	91	NW	1	0.4	.....	5cs	2ks	SW	NW	0	0	Cloudy	
Umatilla, Oregon	29.69	754.1	.....	.....	49	9.4	57	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	47	8.3	100	SE	.....	.....	4	.....	10s	.....	SE	0	0	Cloudy	
Uvalde, Texas	29.03	737.3	29.82	757.4	73	22.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.39	619.5	29.87	758.7	42	5.6	74	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Visalia, California	29.51	749.5	29.87	758.7	58	14.4	75	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.85	758.2	29.96	761.0	70	21.1	85	NW	2	0.9	.....	0	Fog	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	68	20.0	90	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.89	759.2	29.96	761.0	78	25.6	90	W	5	2.2	.....	5c;k	0	calm;w	.....	0.02	0.5	Fair	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	44	6.7	60	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.93	760.2	29.98	761.5	67	19.4	94	E	10	4.5	.....	.....	10s	.....	.....	0.03	0.8	Threatening	
Yankton, Dakota	28.73	729.7	29.98	761.5	61	16.1	91	NW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.64	752.8	29.80	756.9	75	23.9	56	Calm	0	0	.....	0	0	....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.08	764.0	30.13	765.3	41.5	5.3	96	SW	12	5.4	.....	4k	3s	W	SW	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.87	758.7	29.89	759.2	85	29.4	79	E	2.4	1.1	.....	4k	0	NE	.....	0	0	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.65	753.1	29.68	753.9	79	26.1	90	SE	.....	.....	6	0	0	.....	....	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	75	E	3	1.3	.....	2c	2ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	29.95	760.7	29.96	761.0	83	28.3	95	E	3	1.3	.....	8c?	8n?	Calm	SW	0	0	.....	James Gall.
Navassa, W. I	29.74	755.4	29.82	757.4	79	26.1	.....	S	21.7	9.7	.....	.....	.....	.....	.....	1.30	33.0	Raining	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	84	28.9	73	E	.....	.....	1	4c	5k	E	.....	0	0	½ cloudy	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	67.8	19.9	85	Calm	0	0	.....	5cs	5ks	.....	.....	0.04	1.0	.....	Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,769 (?) ft., or 539.4 (?)m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.1 ft. or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,500 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,176.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.13	765.3	79	26 1	79	26.1	86	N	3	1.3	.....	.....	5	.....	NE	0	0	.....	.....	Fair.....	
NavyYard,Portsmouth,N.H	30.01‡	762.2‡	.....	.....	58	14.4	100	NE	9	4.0	.....	.....	10	.....	.....	.....	.....	.....	.....	Rain and fog	
Naval Hospital, Yokohama, Japan.....	29.77*	756.1*	73	22.8	71.5	21.9	??	Calm	.....	.....	0	.....	10n	.....	NNW	0.62	15.7	.....	.....	Gloomy.....	
Adams. S. 31° 22′, W. 171° 16′.....	30.43	772.9	67	19.4	62	16.7	83	NW	.....	.....	2–3	.....	8	.....	NW	0	0	Long	NNW	Cloudy.....	
Alliance, Villafranca, France	30.13‡	765.3‡	.....	.....	79	26.1	66	SE	.....	.....	0–1	.....	0	.....	.....	.....	.....	None	.....	Clear.....	
Ashuelot. Yokohama, Japan	29.85	758.2	74	23.3	72	22.2	95	NW	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	N	Drizzling.....	
Alaska. S. 52° 50′, W. 73° 52′.....	29.68	753.9	52	11.1	41	5.0	91	WSW	.....	.....	6	.....	10	.....	E	0.60	15.2	Smooth	.....	Misty.....	
Canonicus, New Orleans, La.....	30.04	763.0	58	14.4	83	28.3	83	NE	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	29.92‡	760.0‡	.....	.....	68	20.0	90	NNW	17	7.6	.....	.....	8	.....	W	2.06	52.3	.....	.....	Hazy.....	
Constitution, Havre, France.....	29.98‡	761.5‡	.....	.....	69	20.6	95	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Drizzling.....	
Despatch, Constantinople, Turkey	30.14‡	765.5‡	.....	.....	74	23.3	72	NE	.....	.....	6	.....	5	.....	NE	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.....	30.06	763.5	78	25.6	76	24.4	100	N	4.8	2.1	.....	.....	5	.....	W	0.86	21.8	.....	.....	Clear.....	
Gettysburg Toulon, France.....	30.06‡	763.5‡	.....	.....	81	27.2	100	SE	.....	.....	1–2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Guard. Bahia, Brazil.....	30.12	765.0	78	25.6	78	25.6	86	SW	.....	.....	1	.....	8	.....	SW	.....	.....	.....	.....	Cloudy.....	
Hartford, Rio de Janeiro, Brazil ...	29.96	761.0	.....	.....	68	20.0	90	N	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Foggy.....	
Marion. Leghorn, Italy.....	30.02	762.5	76	24.4	80	26.7	44	NE	.....	.....	4	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Michigan, Erie, Pa.....	29.71	754.6	70.5	21.4	69	20.6	87	NNW	.....	.....	2	.....	2	.....	NNW	.....	.....	.....	.....	Fair.....	
Monocacy. Yokohama, Japan	29.83‡	757.7‡	.....	.....	75	23.9	90	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Drizzling.....	
New Hampshire, Port Royal, S. C.....	30.18†	766.6†	.....	.....	80	26.7	91	NNE	1.5	0.7	.....	.....	8	.....	Calm	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.11†	764.8†	.....	.....	62	16.7	83	SE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.08	764.0	72	22.2	71	21.7	100	Calm	.....	.....	0	.....	Fog	.....	.....	.....	.....	.....	.....	Foggy.....	
Palos, Tientsin, China.....	29.87	758.7	82	27.8	79	26.1	78	NNE	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	Hazy.....	
Plymouth. New York, N. Y.....	30.05	763.3	.....	.....	69	20.6	90	N	.....	.....	2	.....	9	.....	N	.....	.....	.....	.....	Cloudy.....	
Ranger. Hong-Kong, China.....	30.00	762.0	87	30.6	87	30.6	87	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Clear.	
Rio Bravo, Brownsville, Texas.....	29.86	758.4	80	26.7	79	26.1	95	SE	.....	.....	1	.....	5	.....	SE	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	29.91‡	759.7‡	.....	.....	73	22.8	86	NW	.....	.....	1	.....	2	.....	NW	0	0	.....	.....	Cloudy.....	
Saratoga, New York, N. Y.....	29.93*	761.7*	.....	.....	67	19.4	95	N	.....	.....	4	.....	10	.....	N	Heavy	Heavy	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	29.92	760.0	72	22.2	70	21.1	90	N	2	0.9	.....	.....	10	.....	NNE	0.48	12.2	.....	.....	Cloudy.....	
Supply, Havre, France.....	30.00	762.0	70	21.1	71	21.7	85	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Swatara, Boston, Mass.....	30.02‡	762.5‡	.....	.....	63	17.2	100	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Trenton, Southampton, England.	29.97‡	761.1‡	.....	.....	68	20.0	90	SSE	.....	.....	2	.....	10	.....	S;E	0.2	5	.....	.....	Raining.....	
Tuscarora. La Paz, Mexico.....	29.69	754.1	73	22.8	75	23.9	86	S	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia. Villafranca, France.....	30.13‡	765.3‡	.....	.....	79	26.1	63	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.05‡	763.3‡	.....	.....	62	16.7	100	NE	6	2.7	.....	.....	10	.....	Calm	0.43	10.9	.....	.....	Foggy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Nanaimo, B. C.		30.20*	767.1*				N			2		2		N				Clear	Capt. Cobb.
S. S City of Peking, N. 36° 11′, E. 156° 12′		30.12†	765.0†	78	25.6	95	SSE	33	14.8			8		SE	Heavy	Mod'ate	SSE	D. clouds	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 15° 57′, W. 98° 13′		30.00†	762.0†	82	27.8	96	NNW			2		6		SE	0	Con-fused	NNE	D. clouds	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, San Francisco, Cal.		29.85†	758.2†	56	13.3	81	W			1		0			0			Blue sky	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

PACIFIC MAIL S. S. CO. MARINE SERIES.

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

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.68*	753.9*	87	30.6	72	SW			3		ks		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 34° 50′, E. 140° 30′		29.77†	756.1†	79	26.1	95	SW			4		8							Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																		Captain Shackelford.	
S. S. Indiana, Philadelphia, Pa		29.97*	761.2*	68	20.0	??	NNE			1		7		NE	Heavy			Clearing	Captain Sargent.
S. S. Ohio, Liverpool		30.03	762.7	68	20.0	84	WSW			1		8		Calm				Hazy	Captain Morrison.
S. S. Pennsylvania, N. 43° 28′, W. 59° 12′		30.15†	765.8†	65	18.3	100	SSE			2		4		SE	0	Light	S	Clear	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																		Capt. Randle.	
S. S. Switzerland, N. 45° 09′, W. 32° 49′		30.08*	764.0*				W	30	13.4			3		W		Mod'ate	WNW	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Cross Ledge Light-house		29.68	758.9	75	23.9	77	NW	3	1.3			Fog			0.38 in or 9.7 mm.			Foggy	Capt. James Jorgensen.
Schooner Florence, Niantlic		29.92*	760.0*	41.0	5.3		NW			1	0	Sks		NE	0			Clearing	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 6, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.09	764.3	73.0	22.8	84	SW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Dr. Ollive.
Nemours	.....	.....	30.08	764.1	78.3	25.7	75	N	.....	.....	5	.....	4	.....	.....	0	0	Cloudy.....	Kesxuche.
Algiers	.....	.....	30.01	762.3	81.7	27.6	75	ENE	.....	.....	3	.....	1	.....	.....	0	0	Very fair.....	Touriliere.
La Calle	.....	.....	29.98	761.6	83.7	28.7	68	NNW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair.	Foufrede.
Tunis	.....	.....	29.94	760.4	79.3	26.3	66	N	.....	.....	3	.....	0	.....	.....	0.020	0.5	Clear.....	Jacques.
Sfax	.....	.....	29.96	761.0	82.4	28.0	.....	NNE	.....	.....	5	.....	7	.....	.....	0	0	Very cloudy	Gau.
Saida	.....	.....	30.08	764.1	82.0	27.8	31	N	.....	.....	5	.....	1	.....	.....	0	0	Very fair.....	Herbin.
Tebessa	.....	.....	29.97	761.2	75.2	24.0	26	NNE	.....	.....	8	.....	5	.....	.....	0	0	Cloudy.....	Watrin.
Geriville	.....	.....	30.02	762.6	86.7	30.4	36	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Brugnlaux.
Laghouat	.....	.....	30.11	764.7	88.2	31.2	19	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.01	762.3	93.2	34.0	22	NW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair..	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.57	751.0	30.09	764.3	80.6	27.0	57	NE	.....	.....	3	.....	4	.....	.....	0	0	.....	Prof. Ivan Stozu.
Cracow, I. R. Observatory	29.39	746.6	30.14	765.5	74.1	23.4	67	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.29	743.9	30.13	765.4	74.1	23.4	62	Calm	.....	.....	0	.....	1cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.92	734.6	30.13	765.3	73.4	23.0	72	S	.....	.....	2	.....	3	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.73	729.7	30.15	765.9	77.2	25.1	66	SSE	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.80	731.4	30.09	764.2	72.7	22.6	66	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	29.18	741.2	30.14	765.5	70.5	21.4	67	N	.....	.....	2	.....	2	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.96	760.9	30.07	763.7	79.9	26.6	64	WNW	.....	.....	2	.....	0	.....	.....	0	0	.....	I. R. Hydrographic Office.
Szathmar	29.72	754.9	30.16	766 1	82.9	28.8	44	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.84	758.0	30.11	764.8	79.2	26.2	72	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.99	761.7	30.09	764.3	83.7	28.7	43	ENE	.....	.....	2	.....	0	.....	.....	0	0	Fair	P. Busin.
Vienna	29.40	746.8	30.08	764.1	80.2	26.8	54	SE	.....	.....	1	.....	3	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:5 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Low'r. 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.93	760.2	68.0	20.0		SSE	12	5.4			3			0.010	0.25	Misty	W. Boswell.
Ardrossan	29.96	761.0	29.98	761.5	62	16.7		SSW			1		6					Foggy	George Carrick.
Armagh, Observatory			30.01	762.2	61.8	16.6		SSW	8	3.6			10					Gloomy	S. Call.
Bidston, (Liverpool Obs.)			30.07	763.8	66.1	18.9		WNW	7	3.1			1					Blue sky	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.67	753.6	30.05	763.3	67.2	19.6		NW			0		6			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.96	761.0	29.99	761.7	86	30.0		E			1		2					D. clouds	Pvt. G. W. Roberts, A.H.O.
Cambridge, Observatory			30.10	764.5	73.7	23.2		W			1		0					Blue sky	H. Todd.
Cardington			20.13	765.3	70.0	21.1		W			1		3					Blue sky	John McLaren.
Chatham, School M. E.	29.98	761.5	30.11	764.8	72.2	22.3		SW			1		0					Blue sky	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.67	728.2	30.13	765.3	61.0	16.1		W			1		7					Gloomy	Alexander Watt.
Donaghadee	29.98	761.5	30.01	762.2	65	18.3		SW			2		5					D. clouds	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	69	20.6		WSW			2		2					Hazy	J. Costello.
Eccles, (near Manchester)			30.05	763.3	69.8	21.0		NW	3.2	1.4			8					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.95	760.7	30.18	766.6	68.6	20.3		WSW			2		8					Overcast	The Staff.
Fort Napier, (Natal)	27.54	699.5	29.85	758.2	82.0	27.8		N			4		1					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.78	756.4	30.01	762.2	83	28.3		W			1		3					D. clouds	
Galway, Queen's College			29.99	761.7	65	18.3		W			2		8					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8				E			3		3					D. clouds	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.78	756.4	29.99	761.7	62.6	17.0		WSW			3		10					Drizzling	D. G. Maclean.
Great Yarmouth	30.06	763.5	30.07	763.8	72	22.2		W			1		2					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.96	761.0	30.12	765.0	69.4	20.8		WSW			1		2					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.96	761.0	30.18	766.6	67	19.4		WNW			1		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.17	766.3	68	20.0		SW			2		3ck			0	0	Fine	M. P. Moyle.
Holyhead	30.02	762.5	30.07	763.8	65	18.3		SW			4		8					D. clouds	John Tilston.
Jersey	29.95	760.7	30.24	768.1	66.2	19.0		W			2		8					Gloomy	J. Fisher.
Kew, Observatory	30.09	764.3	30.12	765.0	67.1	19.5		W	7	3.1			6					D. clouds	The Staff.
Kingstown	30.03	762.7	30.06	763.5	65	18.3		SSE			1		9					Overcast	George Mitchell.
Leicester, Museum			30.05	764.3	68.3	20.2		W			2		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.85	758.2	75	23.9		NE			1		3?n					Overcast?	Sergt. Beckett.
Nairn	29.86	758.4	29.93	760.2	65	18.3		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	82.0	27.8		SE			3		10					Overcast	C. S. Duncombe.
Nottingham, Observatory	29.91	759.7	30.10	764.5	73.8	23.2		NW			2		7k		WSW	0.004	0.10	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.57	751.1	30.08	764.0	70.3	21.3		SW			4		4					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.13	765.3	69	20.6		W			1		3					Blue sky	H.E. Bellamy.
Plymouth	30.09	764.3	30.16	766.1	69.8	21.0		S			3		8					D. clouds	John Merrifield.
Roche's Point	30.03	762.7	30.08	764.0	65	18.3		SW			4		8					Misty	W. Kennedy.
Saint Ann's Head	29.96	761.0	30.12	765.0	66	18.9		SW			1		4					Misty	John C. Walker.
Sandwick Manse, (Orkneys.)			29.94	760.5	59.2	15.1		W	7	3.1			10					Raining	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.07	763.8	80.4	26.9		NE			2		1					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.82	757.4	30.09	764.3	71.1	21.7		SW			1		4			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.99	761.7	30.02	762.5	70.4	21.3	69	N			6		4			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.68	753.9	30.09	764.3	65.0	18.3		SW			2		7					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.91	759.7	30.12	765.0	71.8	22.1		W			1		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.92	760.0	62	16.7		NW			1		10					Misty	John Trotter.
Truro, Royal Institution			30.18	766.6	74	23.3		W			4		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.07	763.8	64.1	17.8		NW	6	2.7			8					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			30.02	762.5	57.0	13.9	88	NW			2		10k			0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.1	72.0	22.2	54	SSW	24.5	11.0		0	3		SSW	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.01	762.2	30.10	764.5	50.3	10.2	89	S	2	0.9			0			0	0	Heavy dew.	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

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

Marine Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 40° 30′, W. 70° 45′			30.10	764.5	68	20.0		E			3		7			2		D. clouds	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 36° 60′, W. 18° 25′			30.23	767.8	76	24.4		Calm			0		5			0		D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. R.
Schooner Traveller, N. 38° 45′ W. 74° 45′			30.07	763.8	70	21.1		NNE			3		7			1	NNE	D. clouds	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

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

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	69.4	20 8	91	Calm	.....	.....	0	8cs	Haze	.....	.....	0.60	15.2	.....	Mr. Ansart. Federico Maison.
San José	26.26	667.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

DANISH SERIES.

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

Copenhagen	30.03	762.7	30.08	763.9	69.6	20.9	73	SSE	.....	.....	4	.....	5	.....	.....	.....	.....	.....	.....
Fanöe	29.98	761.5	30.06	762.0	66 4	19.1	89	S	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farõe)	29.87	758.6	29.90	759.5	55 2	12.9	86	W	.....	.....	2	.....	4	.....	.....	.....	.....	.....	.....
Vestervig	29.84	757.9	30.01	762.2	64.8	18.2	92	SE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

FRENCH SERIES.

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

Alençon, Normal School	29.69	754.0	30.24	768.0	66.6	19.2	83	SW	.....	.....	1	.....	5	.....	W	0.012	0.3	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	30.01	762.2	30.09	764.2	85.3	29 6	43	NNW	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Girand, Director.
Bar-sur-Seine	29.62	752.3	30.16	766.0	72.1	22.3	61	N	.....	.....	2	.....	10	.....	.....	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.90	759.4	30.17	766.4	72.1	22.3	62	NW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.30	744.2	30.16	766.1	75.2	24	80	W	.....	.....	2	.....	10	.....	W	0	0	Covered	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.64	752.8	30.17	766.2	73.4	23	80	SW	.....	.....	1	.....	2ck	.....	SW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.93	760.2	30.17	766.3	71.2	21.8	78	SW	.....	.....	1	.....	10	.....	SW	0	0	.....	The Staff.
Carcassonne, Normal School	29.74	755.4	30.13	765.3	89.6	32	42	W	.....	.....	1	.....	2	NE	E	0	0	Slightly cl'dy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.58	751.2	30.11	764.9	80.1	26.7	66	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.85	758.1	30.16	766.0	73.8	23.2	70	SW	.....	.....	1	.....	5	W	W	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.82	732.1	30.13	765.3	73.8	23.2	73	NE	.....	.....	1	.....	10	.....	NW	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.31	744.4	30.16	766.1	70.7	21.5	82	W	.....	.....	1	.....	10kn	.....	W	0	0	Covered	Dr. Coulet, Director
Commune de Grèasque*	29.01	736.8	30.15	765.8	85.1	29.5	23	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.02	762.5	30.21	767.3	74.7	23.7	69	S	.....	.....	1	.....	5	.....	S	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.89	759.2	30.19	766.9	69.8	21	76	NW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.26	743.2	30.13	765.4	80.6	27	82	NE	.....	.....	1	.....	5	.....	NE	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.16	766.1	30.19	766.9	75.2	24	93	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.08	738.5	30.08	763.9	74.5	23.6	78	SE	.....	.....	1	.....	8k	.....	W	0	0	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.96	761.0	30.17	766.4	90.0	32.2	56	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.08	738.7	30.10	764.4	83.3	28.5	38	S	.....	.....	1	c	.....	S	S	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.39	645.0	.....	.....	57.6	14.2	95	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.18	766.5	30.21	767.3	75.2	24.0	67	NNE	.....	.....	1	.....	2	NNE	NNE	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	29.88?	758.9?	29.96?	761.0?	70.2	21.2	56	SW	.....	.....	1	.....	5	.....	SW	0.028	0.7	Cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.22	767.5	66.0	18.9	80	NW	.....	.....	2	.....	8	.....	NW	0	0	Very cloudy	M. H. Hercouet
Tarbes, Normal School	28.97	735.9	30.23	767.8	64.4	18	80	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.90	759.5	29.93	760.2	82.4	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.46	37.	.....	L'Abbé Marchès.
Lyons	.....	.....	30.15	765.8	77.9	25.5	67	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.05	763.3	83.3	28.5	40	WSW	.....	.....	2	.....	1	.....	.....	0	0	Clear	The Staff.
Mont-Louis	25.08	637.1	30.40	772.1	69.8	21.0	48	E	.....	.....	2	.....	5	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	30.11	764.7	77.0	25.0	74	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.87	758.8	30.15	765.8	72.0	22.2	70	WNW	.....	.....	2	.....	5	.....	WNW	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.10	764.4	85.6	29.8	50	SE	7.4	3.33	.....	.....	9	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.80	579.0	.....	.....	54.0	12.2	.....	SW	.....	.....	1	.....	10	.....	.....	0.150	3.8	Stormy	Gen'l de Nansouty
Saint Maur, (near Paris)	29.99	761.7	30.15	765.9	74.5	23.6	65	W	.....	.....	2	.....	5	.....	W	0	0	.....	E. Renou.
Toulouse, Observatory	29.48	748.7	30.21	767 2	78.4	25.8	54	NNW	.....	.....	2	.....	3	.....	.....	Inap.	Inap.	.....	The Staff.
Tours	30.00	762.0	30.20	767.0	68.7	20.4	80	SW	.....	.....	1	.....	10	.....	N	0	0	.....	C. Marquet.
Versailles	.....	.....	30.17	766.4	72.0	22.2	62	WNW	.....	.....	2	.....	7	.....	.....	0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	759.0	29.91	759.6	71.8	22.1	99	ENE	3.8	1.7	.....	1c	.....	.....	.....	0.484	12.3	Clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:53; p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount.		Clouds. Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10	Up'er 0–10	Low'r 0–10	Upper From—	Lower. From—	Inches.	Millimeters.		
Bamberg	29.27	743.5	30.12	765.0	69.3	20.7	64	E			2		0			0	0		Prof. Dr. Hoh.
Berlin	29.91	759.7	30.08	763.9	77.5	25.3	53	S			1		1			0	0		Prof. Arndt.
Breslau	29.60	751.9	30.13	765.4	79.7	26.5	47	SE			3		3			0	0		Royal University Obs'y
Carlsruhe	29.69	754.1	30.10	764.6	76.6	24.8	69	SW			1		2			0	0		Albert Senz.
Cassel	29.56	749.3	30.11	764.8	78.8	26.0	62	SSE			2		8	SW		0	0		Dr. H. Möhl.
Crefeld	29.93	760.2	30.09	764.3	75.7	24.3	69	W			3		9			0	0		Director Lose.
Emden	30.04	762.9	30.07	763.8	67.3	19.6	66	NW			1		10			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.6	30.10	764.4	79.0	26.1		SSW			2		5			0	0		Physical Society.
Friedrichshafen	28.73	729.7	30.13	765.3	68.0	20.0	73	SSW			2		0			0	0		M. Wilhelm.
Hamburg	30.00	761.9	30.07	763.6	73.8	23.2	70	NW			2		7ck	SW		0	0	Fair	Captain F. Hegemann.
Kiel	30.03	762.7	30.05	763.2	72.1	22.3	72	SW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.14	765.6	30.23	767.7	69.4	20.8	70	E			3		2			0.004	0.1		Prof. E. Luther.
Köslin			30.10	764.5	74.8	23.8		SW			6		0			0	0		H. Müller.
Leipsic, Observatory	29.67	753.7	30.08	763.9	79.9	26.6	51	SW			2		4	WSW		0	0		Prof. Bruhns.
Memel, Naval School	30.20	767.0	30.24	768.2	65.3	18.5	80	Calm			0		1k						Reinbrecht and Skalwei
Neufahrwasser	30.19	766.7	30.20	767.1	68.2	20.1	75	ENE			3		1	SW		0	0		A. Lothes.
Posen	29.87	758.8	30.15	765.9	76.1	24.5	59	SE			2		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.61	752.2	30.14	765.6	77.5	25.3	64	NE			2		2	W		0	0		Astronomical Observatory.
Stuttgart	29.20	741.7	30.13	765.4	78.8	26.0	48	NW			1		1			0	0		Prof. Schoder.
Treves, (Trier)	29.58	751.2	30.10	764.5	75.9	24.4	67	SW			5		2			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.65	727.7	30.12	765.1	75.9	24.4	48	WNW	1.3	0.6			2ck			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.05	763.2	30.09	764.2	78.6	25.9	63	SE			2		3			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.65	753.0	30.02	762.5	85.3	29.6		NE			4.0							Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.55	750.6	29.60	751.8	87.5	30.8	72	SW	25?	11.2?			9		SW	0	0	D. clouds	
Deesa	29.19	741.3	29.66	753.4	82.1	27.8	81	NE					10		NE	1.10	27.9	Showery	
Bombay	29.59	751.7	29.63	752.6	80.2	26.8	91	S	22	9.8			10		SW	0.60	15.2	Overcast	
Poona	27.66	702.6	29.66	753.2	77.7	25.4	82	W					10		W	0.07	1.8	Threatening	
Lahore	28.90	713.5	29.63	752.5	89.1	31.7	63	NE	3.3	1.5			0			0.21	5.3	Blue sky	
Belgaum	27.20	690.8	29.74	755.4	72.4	22.4	94	WSW	8	3.6			10		WSW	0.13	3.3	Drizzling	
Roorkee	28.75	730.3	29.64	752.8	84.4	29.1	74	SW	4	1.8			5			1.43	36.4		
Agra	29.08	738.5	29.64	752.8	81.7	27.6	81	N					9			0	0		
Nagpur	28.60	726.3	29.63	752.6	80.1	26.7	86	SW	5.8	2.6			9		NE	2.22	56.4	Drizzling	
Lucknow																			
Allahabad	29.30	744.2	29.60	752.0	84.1	28.9	87	Calm	1.5	0.7			6			0	0	D. clouds	
Patna	29.48	748.7	29.66	753.2	87.0	30.6	78	E	0.9	0.4			8		SE	0	0	D. clouds	
Hazaribagh	27.66	702.4	29.66	753.3	77.8	25.4	85	SE	10.9	4.9			8			0.02	0.5	Showery	
Cuttack	29.61	752.0	29.69	754.1	82.0	27.8	83	E	1.5	0.7			1			0.72	18.3	Blue sky	
Calcutta (Alipore)	29.68	753.9	29.70	754.5	81.1	27.3	91	S	3.0	1.3			6		SSE	0.14	3.6	Showery	
Goalpara	29.33	745.0	29.72	754.8	81.7	27.6	92	Calm	2.1	0.9			9			0.07	1.8	D. clouds	
Chittagong	29.67	753.7	29.76	756.0	81.4	27.4	91	Calm	3.9	1.7			10			0.17	4.3	Raining	
Sibsagar	29.40	746.7	29.73	755.1	84.6	29.2	77	WSW	1.9	0.8			10	SSE	SSE	0.34	8.6	D. clouds	
Jubbulpore	28.29	718.6	29.65	753.1	79.8	26.6	83	S	3.3	1.5			10			0.10	2.5	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.71	754.6	30.10	764.6	81.3	27.4	41	E	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.98	761.6	30.09	764.3	80.4	26.9	49	E	8.7	3.9	.....	.....	1	NE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.91	759.6	30.09	764.3	81.1	27.3	43	E	3.8	1.7	.....	.....	1	E	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.91	731.7	30.08	763.9	79.9	26.6	52	W	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	28.60	751.7	30.10	764.4	79.9	26.6	64	E	.....	.....	2	.....	8	NE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.22	742.2	30.10	764.4	78.3	25.7	41	NW	2.5	1.1	.....	.....	1	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.24	717.3	30.09	764.3	75.2	24.0	48	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.86	758.5	30.08	763.9	81.0	27.2	51	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.89	759.1	30.05	763.3	83.3	28.5	43	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.80	756.8	30.10	764.6	79.5	26.4	44	E	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.78	756.5	30.03	762.7	86.5	30.3	33	NE	.....	.....	2	.....	2	SE	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.92	760.0	30.01	762.1	78.6	25.9	55	NW	6.3	2.8	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.04	762.9	30.08	764.1	75.9	24.4	71	SW	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guid
Urbino	28.58	726.0	30.09	764.3	72.7	22.6	62	NE	.....	.....	1	.....	4	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	28.80	757.0	29.97	761.3	90.3	32.4	30	W	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Prof. G. S. Ferrari.
Naples, O. U	29.83	757.6	30.02	762.5	88.0	31.1	39	ESE	.....	.....	4	.....	8	SSE	.....	0	0	.....	Prof. L. Palmie.
Lecce	29.76	755.9	30.00	762.1	86.0	30.0	28	NW	3.1	1.4	.....	.....	6	.....	.....	0	0	.....	Prof. C. De Gior.
Cagliari	29.78	756.5	29.97	761.2	84.0	28.9	53	SE	.....	.....	2	.....	3	NE	.....	0	0	.....	Prof. A. Pacinot.
Cosenza	29.15	740.5	30.04	763.1	80.2	26.8	68	NW	.....	.....	1	.....	10	.....	.....	0	0	.....	of. F. D. Conti.
Palermo	29.69	754.0	29.93	760.2	79.0	26.1	62	ENE	6.3	2.8	.....	.....	9	.....	.....	0.421	10.7	.....	rof. G. Cacciat.
Syracuse	29.86	758.4	29.93	760.3	72.1	22.3	81	NE	6.3	2.8	.....	.....	9	E	.....	0.579	14.7	.....	Prof. V. Giulian.
Sub-Series.																			
Naples, S. R.	29.48	748.9	30.04	763.0	84.6	29.2	47	ENE	0.7	0.3	.....	.....	3	N	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.65	753.3	29.85	758.2	72.8	22.7	84	SW	0.9	0.4	.....	.....	9cs;c	.....	.....	0	0	Cloudy	
Tokei (Yeddo) Observatory	29.73	755.1	29.79	756.6	71.0	21.7	98	S	1.8	0.8	.....	0	0	.....	.....	0	0	Fair.....	I. Arai, Director.
Tokei (Yeddo) University	29.69	754.1	29.79	756.6	73.5	23.1	98	E	0	0	.....	1cs	.....	.....	.....	0	0	Fine.....	Prof. P. V. Veeder.

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

MEXICAN SERIES,

By authority of the Secretary of Public Works,

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

Cuernavaca	.....	.....	.....	.....	62.4	16.9	81	N	.....	.....	2	4ck	1s	E	E	0.150	3.8	½ cloudy.....	P. Ceballos.
Guadalajara	25.05	636.2	30.00	761.9	59.0	15.0	91	.....	.....	.....	.....	0	Fog	.....	.....	0.591	15.0	Foggy.....	Prof. L. Perez.
Guanajuato	23.69	601.8	29.83	757.8	63.5	17.5	88	Calm	.....	.....	.....	4	0	.....	.....	0.492	12.5	½ cloudy	F. Ortiz.
Leon	24.42	620.2	29.94	760.4	63.9	17.7	85	NNW	.....	.....	1	3c	6kn	S	Calm	0.276	7.00	½ cloudy	Prof. M. Leal.
Mexico	23.12	587.2	30.09	764.3	58.5	14.7	85	Calm	0	0	.....	0	10k	.....	.....	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.3	16.3	90	SW	.....	.....	1	0	1k	.....	SE	Inap.	Inap.	Clear.....	M. V. de Leon, M. E.
Puebla	23.37	593.5	29.94	760.5	54.0	12.2	89	N	.....	.....	.....	2ck	2cs	.....	.....	0.05	1.31	½ cloudy....	Prof. B. Gonzalez.
Tlacotalpam	29.92	759.9	29.93	760.2	78.8	26	96	S	.....	.....	3	0	0	.....	.....	Inap	Inap.	Foggy	M. M. Cházaro.
San Luis Potosi	24.22	614.6	30.19	765.6	61.0	16.1	56	ESE	3.1	0.4	.....	.....	10	.....	ESE	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.92	760.0	29.95	760.7	82.4	28.0	85	Calm	0	0	.....	.....	8kn	.....	SSE	0.008	0.2	Foggy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	50.0	10.0	74	NE	.....	.....	2	0	2	.....	E	0	0	Clear	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.5	30.00	762.1	51.8	11.0	72	E	0	0	.....	2	1	Calm	Calm	0.256	6.5	.....	Prof. P. Spina, [M. M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.32	719.3	29.95	760.7	77.2	25.1	81	S	1.6	0.8	.....	0	1	.....	W	0.213	5.4	Clear.....	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.5 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.13	765.2	30.13	765.2	71.6	22.0	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.059	1.5	.....	
Groningen	30.02	762.5	30.08	763.9	67.3	19.6	.....	NW	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.07	763.6	30.07	763.6	68.5	20.3	.....	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Hellevoetsluis	30.10	764.4	30.10	764.4	71.6	22.0	84	WSW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.06	763.5	30.11	764.7	75.6	24.2	71	WSW	.....	.....	3	.....	5	.....	.....	0.039	1.0	Cloudy.....	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.93	760.3	29.99	761.7	69.1	20.6	64	SSW	7.4	3.3	.....	.....	1	.....	.....	0	0	.....	
Brönö	29.95	760.8	29.99	761.8	59.0	15.0	49	NE	4	2	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.97	761.2	30.11	764.8	66.2	19.0	80	W	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.99	761.7	30.03	762.8	57.2	14.0	57	SW	9	4	.....	.....	5	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.14	765.5	30.33	770.3	70.2	21.2	76	NE	10.5	4.7	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.10	739.1	30.06	763.4	91.0	32.8	25	SW	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.5	30.07	763.7	82.6	28.1	55	ESE	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.78	756.4	30.13	765.2	76.3	24.6	56	NW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.22	767.6	30.29	769.4	69.8	21.0	85	NE	11.9	5.3	.....	.....	3	.....	.....	0.047	1.2	Light rain...	

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 10′, W. 24° 58′	.....	.....	30.27	768.8	71.6	22	.....	NNE	.....	.....	6	.....	9	.....	NNE	.....	.....	Gloomy	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	30.02	762.4	67.1	19.5	.....	WSW	.....	.....	2	.....	3	.....	WSW	2	WSW	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	30.00	762.0	82.4	28.0	.....	E	.....	.....	4	.....	8	.....	E	3	SE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.94	760.4	75.2	24.0	.....	W	.....	.....	2	.....	9	.....	W	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.83	757.7	88.7	31.5	.....	SW	.....	.....	1	.....	6	.....	SW	0	.....	Lightning....	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.78	756.3	30.19	766.7	72.1	22.3	53	SSE	7	3	.....	.....	1c	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.82	757.5	30.23	767.9	65.5	18.6	77	WNW	2	1	.....	.....	2	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.90	759.4	30.13	765.4	68.7	20.4	46	NW	7	3	.....	.....	6ck	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.02	762.4	30.03	762.8	66.0	18.9	49	NNE	13	6	.....	.....	4ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.55	750.5	30.17	766.2	68.4	20.2	48	NW	4	2	.....	.....	5k	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.16	766.0	30.23	767.8	77.4	25.2	44	N	4	2	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kerich	30.20	767.0	30.22	767.5	73.0	22.8	61	WNW	7	3	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.42	747.2	29.96	760.9	58.3	14.6	87	NE	7	3	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.83	757.6	30.03	762.7	70.9	21.6	40	NNW	18	8	.....	.....	6ck	.....	.....	.....	.....	.....	Meteorological Obs
Archangel	29.98	761.6	30.00	762.1	54.5	12.5	70	NW	.....	.....	.....	.....	4ks	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.60	726.5	29.99	761.7	68.4	20.2	84	NW	4	2	.....	.....	10n	.....	.....	.....	.....	Raining	Physical Observatory
Astrakhan	30.02	762.6	29.94	760.5	70.9	21.6	49	W	11	5	.....	.....	10s;n	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.22	742.2	29.68	753.9	60.8	16.0	64	NW	4	2	.....	.....	5ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.43	747.5	29.69	754.2	56.8	13.8	88	W	4	2	.....	.....	9	.....	.....	.....	.....	Raining	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischet.
Ekaterinburg	28.77	730.8	29.70	754.3	57.2	14.0	91	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Meteorological Obs
Nukuss	29.64	752.9	29.86	758.5	83.3	28.5	28	NNW	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.33	719.6	29.97	761.2	74.1	23.4	59	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.58	751.4	30.09	764.3	63.5	17.5	44	SSW	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.90	759.4	30.19	766.8	53.6	12.0	79	NE	4	2	.....	.....	9	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.86	758.4	30.00	762.0	73.6	23.1	88	Calm	0	0	.....	.....	4ks	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.99	761.7	30.09	764.3	81.3	27.4	60	S	1.4	0.61	.....	.....	4	.....	.....	0	0	.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.11	764.9	30.17	766.3	75.4	24.1	77	NW	1.4	0.65	.....	.....	10	.....	.....	0.028	0.7	Covered.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.24	691.8	.....	.....	78.8	26.0	55	N	5.1	2.28	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.90	708.6	29.98	761.4	92.5	33.6	34	S	2.2	1.00	.....	0	4	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.93	760.2	30.07	763.8	88.0	31.1	48	E	3.0	1.36	.....	1	2	WSW	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.22	742.3	30.10	764.5	72.5	22.5	71	NE	7.4	3.33	.....	1	0	NE	.....	0	0	Almost clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.79	756.7	29.86	758.3	83.2	28.4	75	NNE	13.2	5.9	.....	0	5k	.....	NE	Inap.	Inap.	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands, Sa. Fernando, Naval Obs'y	30.00	762.0	30.09	764.4	79.5	26.4	59	WSW	14.5	6.5	.....	0	2	.....	SW	0	0	.....	Federico Faura, S. J. Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.4	29.99	761.7	83.5	28.6	85	E	6.6	2.97	.....	6cs	2k	E	E	1.976	50.20	D. clouds.....	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.11	764.8	30.15	765.8	60.1	15.6	.....	N	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	30.13	765.2	30.18	766.5	62.2	16.8	64	S	.....	.....	2	.....	2	.....	.....	0	0	.....	
Hernosand	30.11	764.7	30.16	766.0	68.9	20.5	55	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Stockholm	29.99	761.8	30.17	766.3	69.8	21.0	60	Calm	.....	.....	0	.....	4	.....	.....	0.004	0.1	.....	
Wisby	30.06	763.4	30.11	764.9	65.5	18.6	79	W	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.07	763.7	30.14	765.6	71.8	22.1	69	SE	3.4	1.5	.....	.....	8	.....	W	0	0	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.74	730.0	30.11	764.9	72.3	22.4	58	NNE	.....	.....	1	.....	1	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.55	725.1	30.11	764.8	77.0	25.0	54	SW	.....	.....	1	.....	1	.....	.....	0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.7 mm.; Thermometer, +2.9 cent.; Relative Humidity, —2 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.13	765.3	76.5	24.7	51	ENE	27	12.0	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.15	765.8	82.0	27.8	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.67	753.6	29.78	756.5	88.0	31.1	73	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	.....	.....	.....	.....	61.1	16.2	86	NE	6	2.7	.....	.....	9n	.....	.....	0	0	Cloudy.....	Hon. J. Ferguson.
Brockville, Ontario	29.77	756.1	30.07	763.8	67	19.4	.....	E	1	0.4	.....	.....	Fog	.....	E	0	0	Foggy	W. R. Bigg.
*Chatham, N B	29.94	760.5	29.99	761.7	62	16.7	94	Calm	0	0	.....	.....	10ks	.....	SW	0	0	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island	29.92	760.0	29.96	761.0	63	17.2	87	W	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E
Cornwall, Ontario	29.86	758.4	30.05	763.3	66.4	19.1	94	W	.....	.....	1	4cs	4s	NW	.....	0	0	Cloudy.	James Smith, M. A
Dalhousie, N. B	29.86	758.4	30.02	762.5	60	15.6	78	W	.....	.....	2	.....	.....	.....	.....	0	0	Fine.....	H. A. Johnson.
Esquimault, B. C	30.04	763.0	30.09	764.3	48.3	9.1	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	30.11	764.8	30.13	765.3	49	9.4	82	N	15	6.7	.....	0	2ks	.....	Calm	0.08	2.0	Clear.	J. McWilliams.
Fredericton, N. B	29.98	761.5	30.04	763.0	64.0	17.8	87	NW	5	2.2	.....	.....	10s	.....	.....	0	0	Cloudy.....	Prof. Harrison.
*Fort Garry Manitoba	29.10	739.1	29.92	760.0	52	11.1	100	N	8	3.6	.....	.....	10n	.....	.....	0.100	2.54	Light rain...	James Stewart.
Granton, Ontario	29.02	737.1	30.10	764.5	62	16.7	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	29.84	757.9	29.96	761.0	65	18.3	92	SE	1	0.4	.....	.....	8ks	.....	NW	0	0	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.76	755.9	30.12	765.0	66.5	19.2	86	NE	.....	.....	2	2c	.....	NE	.....	0	0	Clear.	Geo. Dickson, M. A.
Heart's Content, N. F	29.98	761.5	30.00	762.0	59	15.0	76	W	.....	.....	2	3k	4ks	.....	.....	0	0	Cloudy.....	E. Weedon.
*Kingston, Ontario	29.74	755.4	30.06	763.5	68	20.0	90	W	3	1.3	.....	5ck	2ks	W	W	0.15	3.8	Fair.....	S. Woods, M. A.
Little Glace Bay, N. S	29.91	755.7	29.94	760.5	63.3	17.4	84	SW	4	1.8	.....	5k	0	SW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.88	758.9	30.07	763.8	67	19.4	84	NE	11	4.9	.....	.....	10s	.....	.....	0	0	Cloudy.....	C. H. McLeod, C. E
*Parry Sound, Ontario	29.44	747.8	30.11	764.8	64	17.8	94	N	9	4.0	.....	5k	5ks	NE	NE	0	0	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.30	744.2	30.02	762.5	70.7	21.5	88	Calm	.....	.....	0	3k	0	.....	.....	0	0	Fine.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.43	747.5	30.10	764.5	63	17.2	94	N	4	1.8	.....	2ck	0	NW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.91	759.7	29.96	761.0	68.4	20.2	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.09	764.3	63	17.2	97	W	1	0.4	.....	2c	0	W	.....	0	0	Clear.....	M. Payne.
*Quebec, Quebec	29.77	756.1	30.08	764'0	59	15.0	94	E	.....	.....	7	.....	10n	.....	E	0.01	0.3	Light rain...	Capt. Ashe, R. N
*Rockliffe, Ontario	29.71	754.6	30.16	766.1	58	14.4	82	N	16	4.5	.....	.....	10s	.....	N	0	0	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	29.96	761.0	30.01	762.2	62	16.7	92	W	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy.....	Dr. Gove.
St. John, N. B	29.87	758.7	30.03	762.7	61	16.1	94	W	3	1.3	.....	.....	10k	.....	.....	0.12	3.0	Cloudy.....	G. Murdock, C. E.
*Saugeen, Ontario	29.40	746.7	30.09	764.3	65	18.3	93	SE	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy.....	K. Stewart.
Stayner, Ontario	29.33	745.0	30.08	764.0	68	20.0	86	Calm	0	0	.....	10k	0	NW	.....	0	0	Cloudy.....	R. J. Cole.
Stratford, Ontario	28.86	733.0	30.10	764.5	61.6	16.4	97	Calm	0	0	.....	2ck	2s	N	.....	0	0	Fair.....	C. J. MacGregor, M. A.
*Sydney, C. B	29.93	760.2	29.95	760.7	65	18.3	83	SW	8	3.6	.....	2c	2ks	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.10	764.5	69	20.6	79	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	58.0	14.4	94	S	.....	.....	.....	.....	10	.....	.....	0	0	Overcast.....	John Delany.

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

UNITED STATES SERIES.

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

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.84	757.9	30.06	763.5	68	20.0	84	NW	4	1.8	.....	5c	0	NW	.....	0.09	2.3	Fair	
Alpena, Michigan	29.44	747.8	30.06	763.5	69	20.6	90	E	4	1.8	.....	2k	8s	W	E	0	0	Cloudy	
Atlantic City, New Jersey	30.01	762.2	30.03	762.7	67	19.4	97	N	10	4.5	.....	.....	10s	.....	N	0	0	Cloudy	
Augusta, Georgia	29.86	758.4	30.04	763.0	80	26.7	82	E	1	0.4	.....	8c;ck	Fog	S;SW	SW	0	0	Fair	
Baltimore, Maryland	30.03	762.7	30.08	764.0	70	21.1	80	N	6	2.7	.....	0	Sm'e	.....	Calm	Inap.	Inap.	Clear	
Barnegat, New Jersey	30.01	762.2	30.04	763.0	70	21.1	90	NE	18	8.0	.....	.....	10ks	.....	NE	0	0	Threatening	
Bismarck, Dakota	28.22	716.8	30.07	763.8	50	10.0	93	Calm	0	0	.....	.....	10s	.....	N	0.04	1.0	Cloudy	
Boerne, Texas	28.54	724.9	.....	.....	77	25.0	86	SE	2	0.9	.....	2c	0	Calm	.....	0	0	Clear	
Boise City, Idaho	27.20	690.9	30.16	766.1	53	11.7	66	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.94	760.5	30.09	764.3	62.5	16.9	94	E	6	2.7	.....	.....	10s;fg	.....	NE;Calm	0.07	1.8	Cloudy	
Brackettville, Texas	28.84	732.5	29.82	757.4	79	26.1	78	SE	4	1.8	.....	1c	1s	Calm	SE	0	0	Clear	
Breckenridge, Minnesota	28.96	735.6	29.94	760.5	55	12.8	100	W	8	3.6	.....	.....	10s	.....	W	0.03	0.8	Cloudy	
Brownsville, Texas	29.90	759.4	29.96	761.0	77	25.0	95	Calm	0	0	.....	.....	10n	.....	Calm	0.66	16.8	Light rain	
Buffalo, New York	29.39	746.5	30.07	763.8	68	20.0	90	Calm	0	0	.....	2ck	Sm'e	Calm	Calm	0.45	11.4	Fair	
Burkes, Arizona	.....	.....	.....	.....	85	29.4	51	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.85	758.2	30.10	764.5	67	19.4	79	S	4	1.8	.....	.....	10s	.....	N	0	0	Cloudy	
Cairo, Illinois	29.64	752.8	30.02	762.5	70	21.1	80	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	55	12.8	80	E	.....	.....	1	0	0	.....	.....	Blank	Blank	Clear	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	63	17.2	38	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.80	680.7	30.29	769.4	65	18.3	73	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Campo, California	27.43	696.7	30.00	762.0	42	5.6	75	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.02	762.5	30.02	762.5	78	25.6	82	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	29.99	761.7	30.02	762.5	75	23.9	86	NW	13	5.8	.....	0	5s	.....	NW	0.02	0.5	Fair	
Cape Lookout, N. Carolina	30.02	762.5	30.04	763.0	78	25.6	91	N	5	2.2	.....	8k	0	W	.....	1.65	41.9	Cloudy	
Cape May, New Jersey	30.02	762.5	30.04	763.0	70	21.1	85	N	12	5.4	.....	5k	0	N	.....	0.02	0.5	Fair	
Castroville, Texas	29.17	740.9	29.84	757.9	79	26.1	82	SE	1	0.4	.....	2c	0	E	.....	0	0	Fair	
Charleston, South Carolina	29.99	761.7	30.06	763.5	81	27.2	87	NE	4	1.8	.....	8c	0	W	.....	0	0	Fair	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	45	7.2	84	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Chicago, Illinois	29.39	746.5	30.06	763.5	69	20.6	75	S	4	1.8	.....	0	Fog	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.45	748.0	30.08	764.0	69	20.6	80	NE	1	0.4	.....	0	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.40	746.7	30.11	764.8	64	17.8	89	S	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Coleman City, Texas	28.20	716.3	29.80	756.9	72	22.2	90	S	4	1.8	.....	5ck	5ks	W	W	0.88	22.4	Cloudy	
Columbus, Ohio	29.29	744.0	30.10	764.5	65	18.3	89	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Corpus Christi, Texas	28.06	712.7	29.67	753.6	70	21.1	90	Calm	0	0	.....	0	5ks	.....	NW	1.04	26.4	Cloudy	
Corsicana, Texas	29.50	749.3	29.95	760.7	74	23.3	95	SE	2	0.9	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Davenport, Iowa	29.46	748.3	30.08	764.0	68	20.0	84	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.86	733.0	29.99	761.7	71	21.7	90	SW	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	29.22	742.2	29.99	761.7	71	21.7	95	Calm	0	0	.....	5k	2s	E	Calm	0	0	Fair	
Denver, Colorado	24.91	632.7	30.13	765.3	53	11.7	80	NW	2	0.9	.....	0	5s	.....	Calm	0.11	2.8	Fair	
Des Moines, Iowa	29.15	740.4	29.98	761.5	76	24.4	69	Calm	0	0	.....	5cs	Haze	Calm	Calm	0	0	Fair	
Detroit, Michigan	29.44	747.8	30.08	764.0	67	19.4	84	Calm	0	0	.....	2c	2s	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.44	697.0	29.64	752.8	68	20.0	90	E	4	1.8	.....	5ck	5ks	S	S	0.32	8.1	Cloudy	
Dubuque, Iowa	29.38	746.2	30.06	763.5	69	20.6	75	SW	3	1.3	.....	0	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.30	744.2	29.96	761.0	62	16.7	94	NE	14	6.3	.....	.....	10n	.....	NE	0.25	6.3	Light rain	
Eagle Pass, Texas	29.12	739.6	29.91	759.7	77	25.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.96	761.0	30.02	762.5	61	16.1	94	W	4	1.8	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	76	24.4	95	E	.....	.....	1	.....	8n;s	.....	Calm;SE	0.07	1.8	Cloudy	
El Paso, Texas	.....	.....	.....	.....	77	25.0	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.38	746.2	30.08	764.0	68	20.0	84	SW	1	0.4	.....	0	8s	.....	Calm	0	0	Cloudy	
Escanaba, Michigan	29.40	746.7	30.03	762.7	65	18.3	94	N	8	3.6	.....	.....	10n	.....	N	0.76	19.3	Light rain	
Florence, Arizona	28.43	722.1	30.03	762.7	72	22.2	67	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.56	649.2	29.62	752.3	64	17.8	67	NW	6	2.7	.....	5k	0	SW	.....	0	0	Fair	
Fort Davis, Texas	25.24	640.8	30.19	766.8	62	16.7	78	Calm	0	0	.....	2cs	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.46	748.3	29.98	761.5	71	21.7	90	E	2	0.9	.....	5cs	Haze	SW	Calm	0.23	5.8	Fair	
Fort Griffin, Texas	28.72	729.5	29.94	760.5	72	22.2	90	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Fort McKavett, Texas	27.84	707.1	29.68	753.9	74	23.3	76	NW	2	0.9	.....	5k	0	NE	.....	0.06	1.5	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.86	758.4	73	22.8	76	S	4	1.8	.....	0	8s	.....	Calm	0	0	Cloudy	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	29.94	760.5	29.98	761.5	80	26.7	87	SE	4	1.8	.....	0	5ks	.....	Calm	0.12	3.0	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.43	747.5	30.06	763.5	71	21.7	80	S	14	6.3	.....	0	2s	.....	Calm	0	0	Fair	
Indianapolis, Indiana	29.34	745.2	30.10	764.5	65	18.3	84	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	29.94	760.5	29.97	761.2	80	26.7	87	S	6	2.7	.....	1k	0	Calm	.....	0.25	6.3	Clear	
Jacksboro, Texas	28.86	733.0	29.95	760.7	72	22.2	90	SE	3	1.3	.....	.....	10s	.....	Calm	Inap	Inap	Cloudy	
Jacksonville, Florida	29.97	761.2	30.00	762.0	80	26.7	87	Calm	0	0	.....	5k	0	Calm	.....	0.03	0.8	Fair	
Keokuk, Iowa	29.43	747.5	30.02	762.5	68	20.0	74	SE	4	1.8	.....	0	1s;hz	.....	Calm	0	0	Clear	
Key West, Florida	29.86	758.4	29.89	759.2	85	29.4	72	NE	16	7.2	.....	3c;k	1ks	Calm; NE	Calm	0.53	13.5	Fair	
Kittyhawk, North Carolina	29.99	761.7	30.02	762.5	75	23.9	86	NE	12	5.4	.....	2k	0	W	.....	Inap	Inap.	Fair	
Knoxville, Tennessee	29.09	738.9	30.07	763.8	69	20.6	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.29	744.0	29.99	761.7	71	21.7	80	S	8	3.6	.....	5ck	0	S	.....	0.06	1.5	Fair	
La Mesilla, New Mexico	26.05	661.7	30.29	767.1	63	17.2	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.48	748.8	29.81	757.2	78	25.6	82	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.88	631.9	30.15	765.8	48	8.9	85	S	4	1.8	.....	5k	0	S	.....	0	0	Fair	
Leavenworth, Kansas	29.13	739.9	29.94	760.5	72	22.2	71	S	6	2.7	.....	5ck	0	SW	.....	0	0	Fair	
Los Angeles, California	29.61	752.1	29.94	760.5	61	16.1	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.54	750.3	30.08	764.0	67	19.4	74	N	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.42	747.3	30.08	764.0	73	22.8	76	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.34	745.2	30.02	762.5	68	20.0	84	NE	4	1.8	.....	.....	10s	.....	Calm	0.61	15.5	Cloudy	
Mason, Texas	28.34	719.8	30.03	762.7	73	22.8	85	Calm	0	0	.....	.....	10n	.....	Calm	1.34	34.0	Heavy rain	
Memphis, Tennessee	29.73	755.1	30.04	763.0	69	20.6	75	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.37	746.0	30.07	763.8	70	21.1	90	W	2	0.9	.....	2c	Haze	.....	.....	0	0	Fair	
Mobile, Alabama	29.97	761.2	30.01	762.2	76	24.4	86	N	5	2.2	.....	5ck	1s	NW	Calm	Inap.	Inap.	Fair	
Montgomery, Alabama	29.78	756.4	30.00	762.0	75	23.9	76	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.09	738.9	30.12	765.0	66	18.9	84	N	2	0.9	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Mt. Washington, N. H.	24.00	609.6	30.36	771.1	48	8.9	92	NW	10	4.5	.....	10ks	2s	Calm	NW	0.15	3.8	Cloudy	
Nashville, Tennessee	29.55	750.6	30.07	763.8	67	19.4	79	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
New Haven, Connecticut	29.96	761.0	30.08	764.0	66	18.9	89	NE	8	3.6	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
New London, Connecticut	30.03	762.7	30.08	764.0	67	19.4	89	N	3	1.3	.....	.....	10s	.....	N	0.55	14.0	Cloudy	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	78	25.6	86	NE	3	1.3	.....	4ck	0	NW	.....	0.01	0.3	Fair	
Newport, Rhode Island	30.02	762.5	30.06	763.5	66	18.9	89	N	6	2.7	.....	.....	10s	.....	.....	1.41	35.8	Threatening	
New York, New York	29.90	759.4	30.07	763.8	69	20.6	79	NE	13	5.8	.....	1cs	5ks	NE	NE	0.04	1.0	Fair	
Norfolk, Virginia	29.99	761.7	30.05	763.3	74	23.3	86	N	4	1.8	.....	0	0	.....	.....	0.14	3.6	Clear	
North Platte, Nebraska	27.17	690.1	29.70	754.4	57	13.9	94	N	2	0.9	.....	.....	10s	.....	SW	0.25	6.3	Cloudy	
Olympia, Washington Ter.	30.10	764.5	30.14	765.5	45	7.2	100	E	2	0.9	.....	Fog	.....	E	E	0	0	Foggy	
Omaha, Nebraska	28.88	733.5	29.92	760.0	69	20.6	95	N	4	1.8	.....	10n	.....	Calm	Calm	0.05	1.3	Light rain	
Oswego, New York	29.79	756.7	30.11	764.8	67	19.4	95	W	2	0.9	.....	Fog	.....	Calm	Calm	0	0	Foggy	
Pembina, Dakota	29.08	738.6	29.90	759.4	52	11.1	100	N	9	4.0	.....	10n	.....	Calm	Calm	0.95	24.1	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Correcte for instrum'tal error and temperature. Inches.	Barometer: Correcte for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.03	762.7	30.08	764.0	69	20.6	85	NE	12	5.4	.....	.....	10ks	.....	NE	0	0	Cloudy	
Phœnix, Arizona	28.74	730.0	.....	.....	72	22.2	71	Calm	.....	.....	0	0	2s	.....	E	0	0	Fair	
Pike's Peak, Colorado	17.96	454.8	30.16	766.1	27	2.8	88	SW	12	5.4	.....	.....	10s	.....	Calm	0.58	14.7	Cloudy	
Pioche, Nevada	24.18	614.2	29.95	760.7	51	10.6	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.31	744.5	30.11	764.8	60	15.6	100	NW	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.43	747.5	30.07	763.8	65	18.3	100	SE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Portland, Maine	30.02	762.5	30.06	763.5	64	17.8	89	Calm	0	0	.....	5k	Fog	Calm	.....	0.02	0.5	Fair	
Portland, Oregon	30.08	764.0	30.10	766.8	52	11.1	86	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Prescott, Arizona	24.88	631.9	30.24	768.1	50	10.0	79	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.22	742.2	30.02	762.5	73	22.8	90	E	2	0.9	.....	0	Fog	.....	Calm	0	0	Foggy	
Punta Rassa, Florida	29.94	760.5	29.96	761.0	83	28.3	79	NE	8	3.6	.....	5cs	0	Calm	.....	0.78	19.8	Fair	
Red Bluff, California	29.55	750.6	29.90	759.4	68	20.0	38	NW	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.77	756.1	29.98	761.5	78	25.6	73	NE	1	0.4	.....	5cs	2s	Calm	Calm	Inap	Inap.	Cloudy	
Rochester, New York	29.48	748.8	30.08	764.0	66	18.9	84	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.57	751.1	30.14	765.5	49.5	9.7	86	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Sacramento, California	29.83	757.7	29.91	759.7	59	15.0	59	S	6	2.7	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.53	750.0	30.09	764.3	70	21.1	70	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	29.97	761.2	29.98	761.5	77	25.0	91	SE	4	1.8	.....	0	0	.....	.....	0.05	1.3	Clear	
St. Paul, Minnesota	29.12	739.6	29.91	759.7	70	21.1	84	S	4	1.8	.....	.....	10n	.....	S	0.11	2.8	Light rain	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	51	10.6	79	E	3	1.3	.....	0	0	.....	.....	0.03	0.8	Clear	
San Antonio, Texas	29.27	743.4	29.83	757.7	77	25.0	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.89	759.2	29.96	761.0	63	17.2	89	N	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.11	764.8	68	20.0	84	SW	5	2.2	.....	1c	0	Calm	.....	0	0	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.05	763.3	68	20.0	90	NE	18	8.0	.....	.....	10s	.....	NE	0.10	2.5	Cloudy	
San Francisco, California	29.92	760.0	29.98	761.5	55	12.8	87	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	49	9.4	61	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
Savannah, Georgia	29.94	760.5	30.03	762.7	80	26.7	87	E	4	1.8	.....	2c	2ks	Calm	Calm	Inap.	Inap.	Fair	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	73	22.8	100	SE	2	0.9	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Silver City, New Mexico	24.35	618.5	.....	.....	56	13.3	80	N	2	0.9	.....	5k	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.02	762.5	30.05	763.3	76	24.4	91	N	4	1.8	.....	2cs	0	W	.....	2.64	61.5	Fair	
Springfield, Massachusetts	29.95	760.7	30.08	764.0	67	19.4	84	NE	2	0.9	.....	5ck	5ks	N	NE	0.71	18.0	Cloudy	
Stockton, Texas	26.95	684.5	29.95	760.7	66	18.9	36	SE	2	0.9	.....	1c	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	30.04	763.0	30.09	764.3	61	16.1	100	NE	7	3.1	.....	.....	Fog	.....	.....	0	0	Foggy	
Toledo, Ohio	29.43	747.5	30.08	764.0	70	21.1	75	W	2	0.9	.....	0	2ks;hz	.....	Calm	0	0	Fair	
Tucson, Arizona	27.25	692.1	29.80	756.9	70	21.1	75	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.06	762.0	30.03	762.7	82	27.8	75	NE	12	5.4	.....	0	5ks	.....	NE	0	0	Fair	
Umatilla, Oregon	29.69	754.1	.....	.....	53	11.7	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	48	8.9	100	SE	.....	.....	7	.....	10n	.....	SE	0.22	5.6	Raining	
Uvalde, Texas	29.04	737.6	29.82	757.4	79	26.1	82	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.37	619.0	29.85	758.2	46	7.8	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.59	751.6	29.95	760.7	62	16.7	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.98	761.5	30.09	764.3	69	20.6	85	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	64	17.8	83	N	.....	.....	1	0	2ks	.....	Calm	0	0	Fair	
Wilmington, N. Carolina	29.96	761.0	30.03	762.7	75	23.9	85	N	6	2.7	.....	0	Haze	.....	.....	0.18	4.6	Clear	
Winnemucca, Nevada	25.71	653.0	30.07	763.8	43	6.1	36	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.02	762.5	30.07	763.8	67	19.4	90	N	1	0.4	.....	.....	10s;fg	.....	.....	1.01	25.7	Cloudy	
Yankton, Dakota	28.77	730.7	30.03	762.7	60	15.6	94	N	6	2.7	.....	.....	10n	.....	Calm	0.38	9.7	Light rain	
Yuma, Arizona	29.66	753.4	29.82	757.4	74	23.3	90	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Fair	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.00	762.0	30.06	763.5	32.5	0.3	93	W	13	5.8	.....	3k	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.82	757.4	29.84	757.9	85	29.4	72	NE	2.4	1.1	.....	0	8ks	.....	NE	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.83	757.7	29.85	758.2	77	25.0	86	SE	.....	.....	4	0	8n	.....	SE	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	83	E	4	1.8	.....	2c	5ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	83	28.3	91	S	13	5.8	.....	8c	5ks	N	S	1.09	27.7	.....	James Gall.
Navassa, W. I	29.81	757.2	29.89	759.2	82.5	28.1	.....	SE	19.6	8.8	.....	.....	.....	.....	.....	3.00	76.2	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762.2	30.01	762.2	83	28.3	75	E	.....	.....	2	0	0	.....	.....	0.020	0.51	Fair	C. J. Hering
Medellin, Colombia, S. A	25.27	641.8	.....	.....	66.5	19.2	87	Calm	0	0	.....	.....	10ks;n	.....	.....	0.81	20.6	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,560 (?) ft., or 1,085.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft.,or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.6 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.12	765.0	79	26.1	79	26.1	86	N	1	0.4			2		NE	0	0			Fair	
Navy Yard, Portsmouth, N.H	30.05‡	763.3‡			64	17.8	89	W	3	1.3			2?			0.1	3.			Overcast?	
Naval Hospital, Yokohama, Japan	29.77*	756.1*	76	24.4	73.9	23.3	95	Calm			0		0			Inap.	Inap.			Clear	
Adams. S. 32° 14′, W. 169° 15′	30.42	772.7	63	17.2	57	13.9	87	S			3–4		2		S	0	0	Mod'ate	SW	Clear.	
Alliance, Villafranca, France	30.10‡	764.5‡			79	26.1	66	SSW			0–1		1		S			None		Hazy.	
Ashuelot. Yokohama, Japan	29.85	758.2	76	24.4	75	23.9	90	E			1		2		Calm			Smooth	N	Clear	
Alaska, S. 52° 05′, W. 73° 43′	29.85	758.2	54	12.2	42	5.6	91	WSW			4		10		NE	0.37	9.4	Smooth		Squally	
Canonicus, New Orleans, La	30.05	763.3	56	13.3	78	25.6	95	N			2		5							Fair	
Colorado. New York, N. Y.	30.08‡	764.0‡			68	20.0	90	NE	8	3.6			8		ENE	0.09	2.3			Hazy.	
Constitution, Havre, France	30.16‡	766.1‡			64	17.8	94	WNW			2		10		Calm					Misty.	
Despatch, Constantinople, Turkey	30.14‡	765.5‡			75	23.9	56	NE			4		2		NE					Clear	
Franklin, Norfolk, Va.	30.16	766.1	77	25.0	75	23.9	95	NNW	6	2.7			2		N	0.27	6.9			Clear	
Gettysburg N. 43° 00′, E. 6° 10′	30.02‡	762.5‡			86	30.0	100	WSW			2		0			0	0	Smooth		Clear	
Guard. Bahia, Brazil	30.20	767.1	79	26.1	81	27.2	74	ENE			1		5		E					Fair	
Hartford, Rio de Janeiro, Brazil	30.02	762.5			74	23.3	68	SSW	24.0	10.7			10		SW	0.02	0.5			Overcast	
Marion. Leghorn, Italy	30.08	764.0	76	24.4	77	25.0	61	NE			3		0			0	0			Clear	
Michigan, Erie, Pa.	29.71	754.6	70.5	21.4	69	20.6	90	SSE			1		10		SSE					Cloudy	
Monocacy. Yokohama, Japan	29.78‡	756.4‡			76	24.4	86	Calm			0		2							Clear	
New Hampshire, Port Royal, S. C.	30.22†	767.6†			81	27.2	87	NNE	6	2.7			5		N	0	0			Fair	
Onward, Callao, Peru	30.10†	764.5†			62	16.7	83	SE			3		10							Misty	
Passaic, Washington, D. C.	30.19	766.8	70	21.1	69	20.6	95	NW			1		Fog							Foggy	
Palos, Tientsin, China	30.10	764.5	77	25.0	74	23 3	76	ESE			3		0							Clear	
Plymouth, New York, N. Y.	30.14	765.5	70	21.1	69	20.6	90	NE			2		2		NE					Cloudy?	
Ranger. Hong-Kong, China	29.94	760.5	87	30.6	86	30.0	83	SW			2		5		E					Fair	
Rio Bravo, Brownsville, Texas	29.90	759.4	78	25.6	78	25.6	100	SE			1		10		Calm					Heavy rain	
Santee, Annapolis, Md.	30.04‡	763.0‡			73	22.8	81	N			1		2		NE	0	0			Hazy	
Saratoga, New York, N. Y.	30.15*	765.8*			69	20.6	85	NE			3		5		SW	Light	Light			Clearing	
St. Louis, League Island, Pa	30.02	762.5	72	22.2	71	21.7	85	NE	9	4.0			10		NNE	0.02	0.5			Cloudy	
Supply, Havre, France	30.25	768.3	68	20.0	66	18.9	90	NW			2		10							Overcast	
Swatara, Boston, Mass.	30.07‡	763.8‡			64	17.8	94	NE			1		10		N;E					Cloudy	
Trenton, Southampton, England	30.11‡	764.8‡			77	25 0	65	NW			2		5		N;W	0	0			Fair	
Tuscarora, La Paz, Mexico	29.75	755 6	74	23.3	75	23.9	81	S			1		0			0	0			Clear	
Vandalia, Villafranca, France	30.08‡	764 0‡			79	26.1	66	SSW			1		2		SSW					Clear	
Wabash, Boston, Mass.	30.07‡	763.8‡			62	16.7	94	NE	4	1.8			10		NE	0	0			Cloudy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, Nanaimo, B. C.		30.28*	769.1*				NW			3		5		NW				Fair.	Capt. Seabury.
S. S City of Peking, N. 36° 30', E. 161° 01'		30.27†	768.8†	75	23.9	100	ESE	26	11.6			2		ESE	Light	Small	ESE	D. clouds.	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.95†	760.7†	56	13.3	81	SW			1		10			0			Overcast.	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghost.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.70*	754.4*	85	29.4	79	SW			1		ks		SW				D. clouds.	Capt. L. Myer.
S. S. Gaelic, Yokohama, Japan		29.87†	758.7†	85	29.4	79	N			3		k		N					Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 37° 0', W. 75° 16'		30.01	762.2	78.5	25.8	78	NNE			3		2		NNE		1	N	Fine.	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		29.96*	761.0*	66	18.9	94	NE			2		10		NE	0			Hazy	Captain Sargent.
S. S. Ohio, Liverpool		30.07	763.8	71	21.7	85	Calm			0		9†		Calm				Clear	Captain Morrison.
S. S. Pennsylvania, N. 41° 46′, W. 66° 04′		30.03†	762.7†	68	20.0	100	NE			1		Fog		NE	0	Light	NE	Foggy	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 14′, W. 38° 35′		30.33*	770.4*				WSW	40	17.9			3		W		Heavy	W	Hazy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 38° 23′, W. 74° 42′		29.98	761.5	73	22.8	81	N	8	3.6			5d		N	0.02 in or 0.5 mm	Smooth		Cloudy	Capt. James Jorgensen.
Schooner Florence, Niantic		30.15*	765.8*	43.0	6.1		W			3	0	0			0			Fair	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 7, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.05	763.3	71.2	21.8	83	NE			2		2			0	0	Fair	Dr. Ollive.
Nemours			30.02	762.4	79.3	26.3	75	NNE			3		3			0	0	Pretty fair.	Kesxuche.
Algiers			29.99	761.7	81.7	27.6	67	NNE			1		0			0	0	Clear	Tourillere.
La Calle			29.93	760.2	75.2	24.0	83	NW			3		7			0.236	6.0	Very cloudy	Foufrede.
Tunis			29.89	759.2	76.6	24.8	59	WNW			5		0			0.079	2.0	Clear	Jacques.
Sfax			29.95	760.7	82.4	28.0	.....	NNE			5		5			0.354	9.0	Cloudy	Gan.
Saida			30.06	763.5	79.7	26.5	34	NNW			3		1			0	0	Very fair	Herbin.
Tebessa			29.94	760.4	72.1	22.3	86	N			6		6			0	0	Cloudy	Watrin.
Geriville			30.00	762.1	87.8	31.0	20	N			3		2			0	0	Fair	Brugnlaux.
Laghouat			30.08	764.1	84.9	29.4	20	E			1		2			0	0	Fair	Bertrand.
Biskra			30.01	762.2	92.3	33.5	21	NE			1		2			0.039	1.0	Fair	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.50	749.4	30.03	762.7	81.9	27.7	54	SE			2		3			0	0		Prof. Ivan Stoza.
Cracow, I. R. Observatory	29.27	743.5	30.00	762.1	78.4	25.8	59	SW			1		3			0	0		Dr. Wierzbiski
Eperies	29.17	740.8	30.01	762 2	75.4	24.1	63	Calm			0		6cks			0	0		Julius Mikolik.
Gratz	28.84	732.5	30.04	763.1	74.8	23.8	69	SW			3		0			0	0		Andreas Rospini.
Hermannstadt	28.62	726.9	30.04	763.1	75.2	24.0	45	NW			1		0			0	0		Prof. A. Gottschling.
Kremtmünster	28.73	729.7	30.02	762.5	72.3	22.4	63	ENE			3		3			0	0		Prof. C. Wagner
Lemberg	29.06	738.1	30.01	762.3	72.0	22.2	68	N			1		4			0	0		Dr. T. Stanecki.
Pola	29.88	759.0	29.99	761.7	79.5	26.4	73	WNW			2		3c			0	0		I.R.Hydrographic Office.
Szathmar	29.01	762.1	30.05	763.2	84.7	29.3	38	SW			1		3			0	0		Julius Csics, S. J.
Szegedin	29.76	755.8	30.02	762.6	79.5	26.4	58	Calm			0		5			0	0		Karl Stancel.
Trieste	29.91	759.8	30.02	762.4	84.6	29.2	41	ENE			2		0			0	0	Fair	P. Busin.
Vienna	29.36	745.7	30.04	763.0	81.3	27.4	43	Calm			0		0			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.03	762.7	30.12	765.0	57.0	13.9	.....	ENE	9	4.0	.....	.....	6	.....	.....	0	0	D. clouds.....	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	63	17.2	.....	SSW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.12	765.0	63.4	17.4	.....	SE	5	2.2	.....	.....	10	.....	.....	.....	.....	Gloomy.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.12	765.0	65.5	18.6	.....	NW	4	1.8	.....	.....	9	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.72	754.9	30.12	765.0	66.0	18.9	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.97	761.2	30.00	762.0	76.5	24.7	.....	E	.....	.....	1	.....	9	.....	.....	.....	.....	Raining.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.12	765.0	75.0	23.9	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	30.14	765.5	72.0	22.2	.....	W	.....	.....	0	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	30.01	762.2	30.14	765.5	73.7	23.2	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.70	729.0	30.16	766.1	58.0	14.4	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	Gloomy.....	Alexander Watt.
Donaghadee	30.10	764.5	30.13	765.3	63	17.2	.....	NE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.10	764.5	30.13	765.3	67	19.4	.....	SSW	....	.....	1	.....	1	.....	.....	.....	.....	Hazy.....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.10	764.5	67.8	19.9	.....	S	.....	.....	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	.....	.....	.....	.....	61.8	16.6	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Rain and fog	The Staff.
Fort Napier, (Natal)	27.50	698.5	29.82	757.4	77.5	25.3	.....	N	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.77	756.1	30.00	762.0	78	25.6	.....	W	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds..	
Galway, Queen's College	.....	.....	30.04	763.0	69	20.6	.....	NW	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.01	762.2	.....	.....	.....	E	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.89	759.2	30.10	764.5	64.5	18.1	.....	WSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	30.13	765.3	30.13	765.3	67	19.4	.....	ESE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.96	761.0	30.13	765.3	71.1	21.7	.....	WSW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.92	760.0	30.13	765.3	66	18.9	.....	SE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.00	762.0	67	19.4	.....	E	.....	.....	0	.....	6k	.....	.....	0	0	Fair.....	M. P. Moyle.
Holyhead	30.06	763.5	30.12	765.0	65	18.3	.....	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	30.00	762.0	30.19	766.8	65.0	18.3	.....	SSE	.....	.....	1	.....	9	.....	.....	.....	.....	.....	J. Fisher.
Kew, Observatory	30.10	764.5	30.14	765.5	70.0	21.1	.....	SSW	7	3.1	.....	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	30.10	764.5	30.13	765.3	62	16.7	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Misty.....	George Mitchell.
Leicester, Museum	.....	.....	30.12	765.0	66.0	18.9	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.71	754.6	29.78	756.4	78	25.6	.....	SE	.....	.....	1	.....	3?cs	.....	.....	.....	.....	Overcast? ..	Sergt. Beckett.
Nairn	30.02	762.5	30.09	764.3	66	18.9	.....	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Clear	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.83	757.7	78.0	25.6	.....	SE	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.95	760.7	30.13	765.3	71.9	22.2	.....	SW	.....	.....	1	.....	10k	.....	SW	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.61	752.1	30.13	765.3	62.1	16.7	.....	ENE	.....	.....	0–1	.....	10	.....	.....	.....	.....	Foggy.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.14	765.5	67	19.4	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds.....	H.E. Bellamy.
Plymouth	30.08	764.0	30.15	765.8	63.1	17.3	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	30.03	762.7	30.07	763.8	67	19.4	.....	SE	.....	.....	3	.....	5	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	29.96	761.0	30.12	765.0	65	18.3	.....	S	.....	.....	2	.....	7	.....	.....	.....	.....	Misty.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.10	764.5	58.5	14.7	.....	WSW	9	4.0	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.97	761.2	82.6	28.1	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.90	759.4	30.17	766.3	68.7	20.4	.....	SE	.....	.....	1	.....	10	.....	.....	0	0	Overcast.....	W. F. Cooper.
Silloth Rectory	30.10	764.5	30.13	765.3	68.0	20.0	58	Calm	.....	.....	0	.....	5	.....	.....	0	0	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.73	755.1	30.14	765.5	65.9	18.8	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.93	760.2	30.14	765.5	70.0	21.1	.....	W	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	30.09	764.3	64	17.8	.....	NNW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.14	765.5	65	18.3	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.05	763.3	67.2	19.6	.....	ENE	5	2.2	.....	.....	10	.....	.....	Blank	Blank	D. clouds.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.94	760.5	57.0	13.9	56	SE	.....	.....	1	.....	10kn	.....	.....	0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.12	765.0	68.8	20.4	54	SSE	26.0	11.6	.....	0	2	.....	S	0	0	Squally; fine	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	57.8	14.3	77	NE	8	3.6	.....	.....	10	.....	.....	.....	.....	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to the sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell: Height scale 0–9	Sea or swell: Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine, N. 40° 15', W. 72° 15'	3	.....	D. clouds.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 35° 40', W. 19° 40'	2	WNW	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 38° 10', W. 72° 40'	4	NE	D. clouds.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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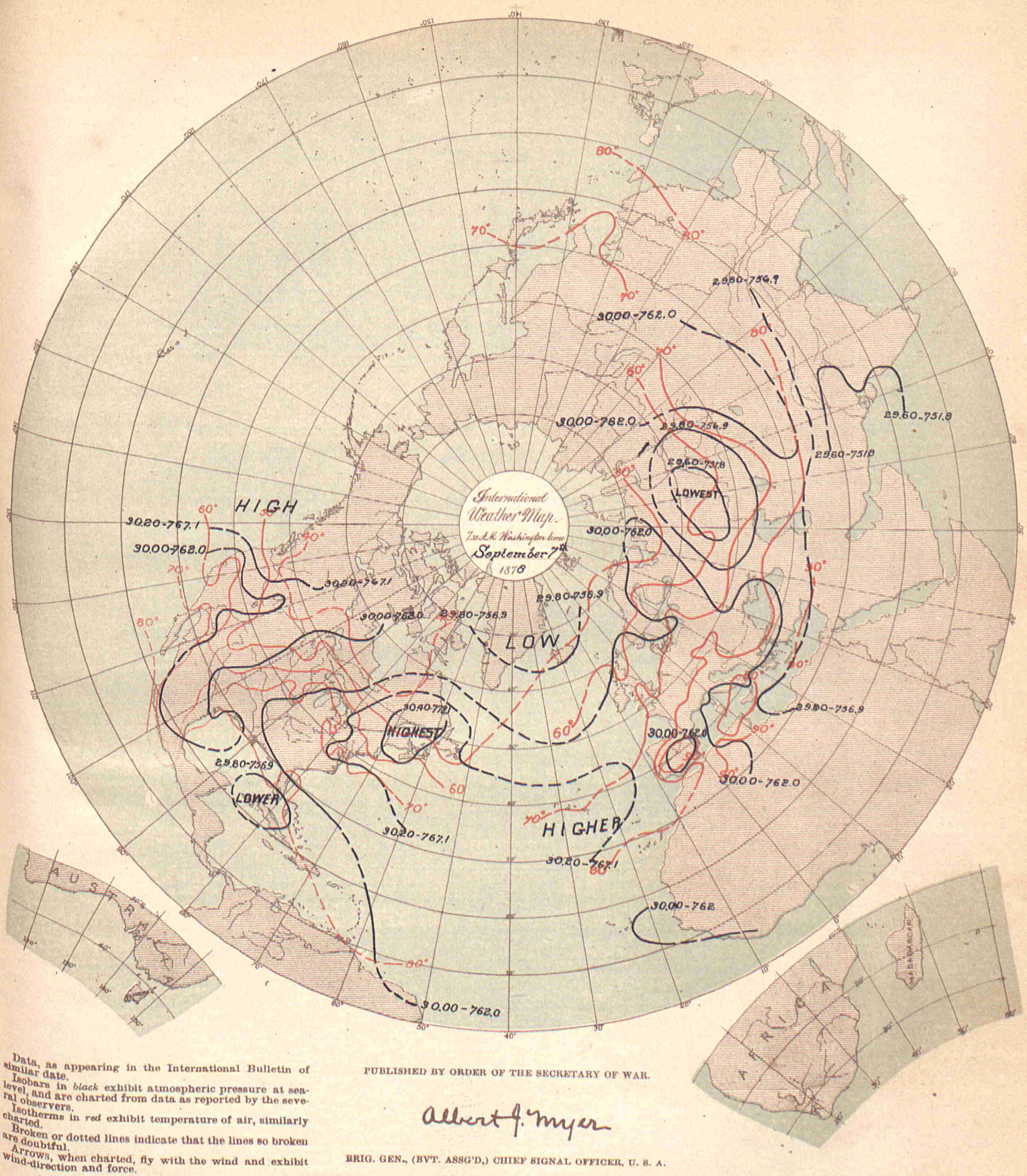
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.28	667.5	.....	.....	67.6	19.8	95	SE	.....	.....	1	8cs	.....	.....	.....	Inap.	Inap.	.....	Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.01	762.2	30.06	763.4	65.8	18.8	72	NW	.....	.....	2	.....	9	.....	.....	.....	.....	.....	.....
Fanöe	30.07	763.8	30.09	764.3	65.1	18.4	77	WNW	.....	.....	2	.....	9	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farôe)	29.85	758.2	29.89	759.1	57.4	14.1	75	SW	.....	.....	4	.....	3	.....	.....	.....	.....	.....	.....
Vestervig	29.86	758.4	30.03	762.7	63.3	17 4	94	NW	.....	.....	2	.....	4	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

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

Alençon, Normal School	29.65	753.0	30.20	767.0	70.2	21.2	87	N	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.93	760.7	30.03	762.7	86.9	30.5	47	N	.....	.....	1	.....	0	.....	.....	0	0	Very clear..	M. Giraud, Director.
Bar-sur-Seine	29.56	750.8	30.10	764.4	73.6	23 1	61	NE	.....	.....	2	2c	.....	.....	.....	0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.88	759.0	30.16	766.1	69.4	20.8	65	NW	.....	.....	1	.....	2	.....	NW	0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.20	741.6	30.06	763.5	76.6	24.8	63	E	.....	.....	2	.....	2	.....	NE	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.58	751.4	30.11	764.9	73 4	23	76	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.85	758.2	30.10	764.4	69.1	20.6	80	S	.....	.....	1	.....	10	.....	S	0	0	.....	The Staff.
Carcassonne, Normal School	29.61	752.2	30.00	761.9	87.8	31	41	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.62	752.4	30.17	766.2	80.4	26.9	54	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.81	757.2	30.12	765.0	75.2	24.0	67	W	.....	.....	1	.....	2	W	W	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.75	730.2	30.05	763.2	74.5	23.6	64	E	.....	.....	1	.....	1	.....	.....	0	0	Almost clear	Alluard, Director.
Commercy, Normal School	29.24	742.8	30.10	764.4	71.6	22	82	W	.....	.....	1	.....	2kn	.....	W	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.98	736.1	30.12	765.1	84.7	29.3	33	SE	.....	.....	2	.....	8	SE	.....	0	0	¾ Covered ..	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.02	762.6	30.24	768 0	71.2	21.8	84	W	.....	.....	1	.....	5	.....	W	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.84	758.0	30.15	765.7	70.7	21.5	75	N	.....	.....	1	.....	5	.....	E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.22	742.1	30.10	764.4	76.6	24.8	71	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.13	765.2	30.16	766.0	75.7	24.3	93	W	.....	.....	1	.....	2	W	.....	0	0	Partly cl'dy	M. Galzin, Director
Mirecourt, Normal School	29.07	738.4	30.08	764.0	72.0	22.2	81	N	.....	.....	1	.....	2k	.....	N	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.83	757.6	30.04	763.0	92.5	33.6	56	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.02	737.0	30.03	762.7	81.5	27.5	49	N	.....	.....	1	.....	k	N ·	N	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.32	643.2	.....	.....	58.3	14.6	82	SW	.....	.....	1	.....	5	.....	S	0	0	Cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.11	764.7	30.14	765.5	78.1	25.6	69	NW	.....	.....	1	.....	2	NW	NW	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	29.89	759.1	29.97	761.2	70.3	21.3	79	E	.....	.....	1	.....	10	.....	SW	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.14	765.6	67.8	19.9	71	NE	.....	.....	2	.....	5	.....	ENE	0	0	Cloudy	M. H. Hercouet
Tarbes, Normal School	29.01	736.9	30.08	763.9	64.4	18	80	WSW	.....	.....	1	.....	10	.....	.....	0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.90	759.5	29.93	760.2	83.1	28.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	5.	.....	L'Abbé Marchési.
Lyons	.....	.....	30.10	764.6	79.2	26.2	56	.....	.....	.....	.....	.....	5	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.99	761.8	82.9	28.3	42	W	.....	.....	1	.....	4	.....	.....	0	0	Partly cl'dy	The Staff.
Mont-Louis	25.04	636.1	30.36	771.1	66.9	19.4	53	ESE	.....	.....	2	.....	3	.....	S	0.177	4.5	.....	M. Cave.
Nice	.....	.....	30.03	762.8	78 1	25.6	71	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.85	758.2	30.13	765.2	71.2	21.8	65	NE	.....	.....	2	.....	4	.....	SE	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.04	763.0	83.7	28.7	53	SE	11.2	5.00	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi. (Plantade,) H. P.	22.73	577.3	.....	.....	62.6	17.0	.....	SW	.....	.....	1	.....	4	.....	.....	0	0	Fair	Gen'l de Nansou y
Saint Maur, (near Paris)	29 97	761.1	30.13	765.3	71.2	21.8	67	N	.....	.....	1	.....	5	.....	E	0	0	.....	E. Renou.
Toulouse, Observatory	29.41	747.0	30.13	765.4	80.1	26.7	46	NNW	.....	.....	2	.....	2	.....	.....	0	0	.....	The Staff.
Tours	29.93	760.1	30.12	765.1	71.4	21.9	67	ESE	.....	.....	1	.....	5	.....	NNW	0	0	.....	C. Marquet.
Versailles	.....	.....	30.14	765.6	73.4	23.0	52	N	.....	.....	2	.....	9	.....	.....	0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	758.9	29.90	759.5	70.2	21.2	95	ENE	4.5	2.0	.....	.....	0	.....	.....	0	0	Clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.8	30.09	764.3	72.0	22.2	64	W			2		3	W		0	0		Prof. Dr. Hoh.
Berlin	29.03	760.3	30.10	764.5	73.9	23.3	62	W			1		0			0	0		Prof. Arndt.
Breslau	29.55	750.6	30.08	764.1	78.8	26.0	51	WNW			3		3			0	0		Royal University Obs'y
Carlsruhe	29.64	752.8	30.04	763.1	78.8	26.0	68	NE			1		1			0	0		Albert Sena.
Cassel	29.55	750.5	30.16	766.0	75.6	24.2	60	NNE			2		2	WSW		0	0		Dr. H. Möhl.
Crefeld	29.97	761.3	30.13	765.4	70.7	21.5	71	NW			1		3			0	0	Dust-haze	Director Lose.
Emden	29.89?	759.3?	29.93?	760.2?	68.9	20.5	74	W			1		0			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.6	30.10	764.4	79.7	26.5		NNE			1		2			0	0		Physical Society.
Friedrichshafen	28.65	727.7	30.04	763.1	70.0	21.1	80	SW			1		2	SW		0	0		M. Wilhelm.
Hamburg	30.13	765.3	30.20	767.0	68.2	20.1	73	W			3		6k			0	0	Fair	Captain F. Hegemann.
Kiel	30.08	764.1	30.10	764.5	67.8	19.9	66	NW			2		1			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.95	760.6	30.02	762.6	74.3	23.5	57	E			2		2			0	0		Prof. E. Luther.
Köslin			30.03	762.8	66.4	19.1							2			0	0		H. Müller.
Leipsic, Observatory	29.72	754.9	30.13	765.2	73.9	23.3	66	NW			1		8			0	0		Prof. Bruhns.
Memel, Naval School	30.03	762.7	30.08	763.9	71.8	22.1	60	Calm			0		6cs;k						Reinbrecht and Skalweit.
Neufahrwasser	30.02	762.4	30.03	762.8	71.6	22.0	71	E			2		4			0	0		A. Lothes.
Posen	29.79	756.6	30.07	763.6	78.8	26.0	62	NW			4		2			0	0		Dr. Magener.
Strassburg (in Alsace)	29.55	750.6	30.08	763.9	78.1	25.6	70	NE			2		5	NE		0	0		Astronomical Observatory.
Stuttgart	29.14	740.1	30.03	762.8	79.2	26.2	41	E			1		2	E		0	0		Prof. Schoder.
Treves, (Trier)	29.56	750.7	30.08	764.0	76.6	24.8	61	E			4		2			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.61	726.6	30.08	763.9	75.6	24.2	54	NE	1.1	0.5			4ck		NE	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.10	764.6	30.14	765.6	66.7	19.3	74	NNW			4		10			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.60	751.8	29.97	761.2	87.4	30.8		NE			3.0							Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.51	749.4	29.55	750.6	69.4	31.9	68	SW	27?	12.1?			10			0	0	Overcast	
Deesa	29.14	740.2	29.62	752.3	81.7	27.6	92	E					3	E		0.52	13.2	D. clouds	
Bombay	29.65	750.6	29.59	751.5	80.9	27.2	96	SSE	40	17.9			10		S	0.02	0.5	Overcast	
Poona	27.67	702.8	29.66	753.4	77.9	25.5	76	SW					10		SW	0	0	D. clouds	
Lahore	28.93	734.8	29.66	753.4	83.0	28.3	79	N	2	0.9			3			0.12	3.0	Blue sky	
Belgaum	27.20	690.9	29.76	755.8	69.5	20.8	92	WSW	14	6.3			9	SE	WSW	0.14	3.6	Showery	
Roorkee	28.73	729.6	29.61	752.1	84.2	29.0	75	SW	3	1.3			3			0.14	3.6		
Agra	29.09	738.9	29.65	753.2	81.7	27.6	87	N					10		N	0	0		
Nagpur	28.61	726.7	29.64	752.9	81.9	27.7	81	Calm	6.2	2.3			9			0.05	1.3	Gloomy	
Lucknow																			
Allahabad	29.30	744.3	29.61	752.1	83.9	28.8	90	Calm	1.4	0.6			10	E		0.01	0.3	Overcast	
Patna	29.46	748.2	29.64	752.8	86.0	30.0	85	E	1.3	0.6			6	E	E	0	0	D. clouds	
Hazaribagh	27.65	702.2	29.63	752.7	81.8	27.7	78	SE	8	3.6			3			0	0		
Cuttack	29.58	751.3	29.66	753.4	85.0	29.4	79	SE	1.3	0.6			4			0	0	D. clouds	
Calcutta (Alipore)	29.66	753.4	29.68	753.9	83.2	28.4	90	S	3.0	1.3			7		SSE	0	0	D. clouds	
Goalpara	29.27	743.4	29.66	753.2	81.7	27.6	87	Calm	2.4	1.0			8			0.59	15.0	D. clouds	
Chittagong	29.64	752.8	29.73	755.1	83.7	28.7	85	SSW					6	SW		0	0	Misty	
Sibsagar	29.37	746.0	29.70	754.4	80.9	27.2	89	ENE	3.3	1.5			10		W	0.48	12.2	D. clouds	
Jubbulpore	28.31	719.1	29.66	753.4	82.7	28.2	80	SE	3.4	1.5			7			0.08	2.0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.71	754.7	30.11	764.7	82.8	28.2	43	SE	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.91	759 7	30.02	762.4	82.4	28.0	45	NE	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.84	757.8	30.02	762.5	82.0	27.8	46	SE	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.73	729.8	30.00	762.0	82.4	28.0	46	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.53	750.0	30.02	762.6	82.4	28.0	56	E	.....	.....	1	.....	3	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.16	740.5	30.03	762.7	80.2	26.8	48	W	2.5	1.1	.....	.....	3	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.8	30.03	762.7	76.3	24.6	45	NW	.....	.....	4	.....	1	W	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.80	756.9	30.01	762.3	82.8	28.2	51	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.84	757.8	30.00	761.9	85.1	29.5	47	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.72	755.0	30.03	762.8	81.5	27.5	44	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.72	754.9	29.97	761.1	88.3	31.3	27	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.87	758.8	29.96	760.9	80.4	26.9	56	NW	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.98	761.5	30.03	762.7	76.6	24.8	71	N	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.52	724.4	30.03	762.7	74.5	23.6	54	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.78	756.3	29.95	760.6	80.2	31.8	36	SSW	3.8	1.7	.....	.....	8	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.76	755.8	29.95	760.7	56.5	30 3	39	NNE	.....	.....	4	.....	9	SE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.72	755.0	29.97	761.2	80.6	27.0	64	NW	11.2	5.0	.....	.....	7	N	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.71	754.5	29.89	759.2	86.2	30.1	44	NE	.....	.....	2	.....	7	NE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.11	739.4	30.00	762.0	74.5	23.6	72	SW	0	0	.....	.....	10	.....	.....	0.350	8.9	.....	Prof. F. D. Conti.
Palermo	29.64	752.9	29.89	759.2	77.7	25.4	64	E	4.3	1.9	.....	.....	10	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Syracuse	29.90	759.4	29.97	761.3	73.9	23.3	84	E	6.3	2.8	.....	.....	9	WSW	.....	0.945	24.0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.42	747.2	29.97	761.3	84.0	28.9	47	NE	2.5	1.1	.....	.....	8	E	.....	0.039	1.0	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

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

Nagasaki	29.64	752.8	29 84	757.9	76.6	24.8	72	NE	3.9	1.7	.....	.....	10s;n	.....	.....	0.450	11.43	Light rain...	
Tokei (Yeddo) Observatory.	29.91	759.7	29.98	761.5	72.8	22.7	94	NE	4.4	2.0	.....	6ck	1s	.....	.....	0	0	Fair.....	I. Arai, Director.
Tokei (Yeddo) University..	29.87	758.7	29.96	761.0	73	22.8	98	NE	2	0.9	.....	2cs	.....	.....	.....	0	0	Lunar halo.	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Cuernavaca	.....	.....	.....	.....	64.5	18.1	70	N	.....	.....	4	4cs	0	.....	.....	0	0	½ cloudy.....	P. Ceballos.
Guadalajara	25.08	637.1	30.04	762.9	60.4	15.2	88	.....	.....	.....	.....	0	6ks	.....	E	0	0	Cloudy.....	Prof. L. Perez.
Guanajuato	23.72	602.6	29.87	758.7	63.7	17.6	85	E	.....	.....	.....	0	10	.....	.....	0.984	25.0	Covered.....	F. Ortiz.
Leon	24.46	626.4	30.00	762.1	63.1	17.3	91	NW	.....	.....	1	2c	8n	NE	Calm	1.442	36.60	Misty.....	Prof. M. Leal.
Mexico	23.14	587.8	30.13	765.4	57.2	14.0	85	Calm	0	0	.....	2c	3k	.....	NW	0	0	½ cloudy.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	62.6	17.0	95	Calm	.....	.....	0	0	10n	.....	.....	2.497	63.4	Raining	M. V. de Leon, M. E.
Puebla	23.40	594.3	30.06	763.4	54.9	12.7	91	E	0.9	0.4	.....	4ck	5kn	.....	.....	1.84	46.68	Cloudy.....	Prof. B. Gonzales.
Tlacotalpam	29.96	761.0	29.97	761.3	77	25	96	S	.....	.....	2	0	0	.....	.....	0	0	Foggy	M, M. Cházaro.
San Luis Potosi	24.12	615.1	30.09	764.5	63.0	17.2	51	SE	3.1	0.4	.....	.....	10	.....	ESE	0	0	Covered.....	G. Barreda, M. D.
Vera-Cruz	29.96	761.1	29.99	761.7	82.4	28.0	81	Calm	0	0	.....	.....	8kn	.....	.....	0.095	2.4	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	60.0	10	77	NE	.....	.....	3	0	2	.....	E	0	0	Clear.	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.30	592.0	30.06	763.4	62.7	11.5	88	NE	1.3	0.6	.....	2	1	Calm	E	1.402	35.6	.....	Prof. P. Spina, [M. M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.38	720.9	30.01	762.2	78.4	25.8	84	SE	0.8	0.4	.....	0	8	.....	SW	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.16	766.0	30.16	766.0	68.7	20.4	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Groningen	30.08	763.9	30.13	765.3	69.3	20.7	.....	SW	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.12	765.0	30.12	765.0	66.9	19.4	.....	SW	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.14	765 6	30.14	765.6	72.5	22.5	87	W	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.11	764.8	30.16	766.0	67.5	19.7	82	W	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.97	761.3	30.03	762.7	59.7	15.4	93	S	3.8	1.7	.....	.....	8	.....	.....	0.252	6.4	Rain & fog...	
Brône	29.89	759.3	29.93	760.3	57.6	14.2	90	S	4	2	.....	.....	10	.....	.....	0.157	4.0	Light rain...	
Christiania	29.83	757.6	29.97	761.2	66.0	18.9	83	WSW	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.82	757.5	29.87	758.6	56.5	13.6	85	SW	9	4	.....	.....	10	.....	.....	0.087	2.2	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.19	766.8	30.38	771.6	69.8	21.0	67	ENE	13.0	5.8	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.02	737.0	29.98	761.4	90.0	32.2	24	SSW	4.3	1.9	.....	.....	6	SW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	79.2	26.2	63	SE	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.70	754.4	30.05	763.3	71.8	22.1	69	NNE	15.0	6.7	.....	.....	4	SSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.26	768.6	30.33	770.4	70.2	21.2	86	NE	16.1	7.2	.....	.....	3	.....	.....	0.021	0.6	.....	

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

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 37° 39', W. 22° 52'	.....	.....	30.32	770.1	74.7	23.7	.....	ENE	.....	.....	6	.....	5	S	ENE	6	NE	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03', E. 12° 02'	.....	.....	29.98	761.4	68.0	20.0	.....	W	.....	.....	2	.....	0	.....	.....	2	W	Blue sky	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	30.00	762.0	82.8	28.2	.....	E	.....	.....	2	.....	4	.....	E	3	ESE	D. clouds...	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	29.91	759.8	77.0	25.0	.....	W	.....	.....	1	.....	4	.....	Calm	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.83	757.6	80.6	27.0	.....	SW	.....	.....	2	.....	3	.....	SW	0	.....	D. clouds...	M T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.62	752.4	30.03	762.7	74.8	23.8	54	S	7	3	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.68	753.8	30.09	764.2	67.6	19.8	64	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds...	Astronomical Obs.
Dorpat	29.87	758.8	30.11	764.8	67.8	19.9	48	NE	2	1	.....	.....	2c	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.10	764.4	30.11	764.8	59.7	15.4	62	E	11	5	.....	.....	1ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.35	745.5	29.97	761.1	68.4	20.2	58	NW	7	3	.....	.....	6ks;k	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.97	761.1	30.04	762.9	73.0	22.8	58	NNW	13	6	.....	.....	9cs;n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.01	762.3	30.03	762.8	75.6	24.2	76	NNW	7	3	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.42	747.3	29.96	761.0	57.9	14.4	70	N	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.63	752.6	29.83	757.7	70.7	21.5	56	WNW	22	10	.....	.....	8n	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.11	764.7	30.13	765.2	47.7	8.7	92	N	4	2	.....	.....	10	.....	.....	.....	.....	.....	Ogorodnikof.
Tiflis	28.58	726.0	29.93	760.2	80.6	27.0	32	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.89	759.2	29.81	757.1	73.9	23.3	39	W	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Sebastianof.
Krotkowo*	29.07	738.3	29.52	749.9	57.9	14.4	74	NNE	4	2	.....	.....	7k	.....	.....	.....	.....	Heavy rain..	Cand. Fatjanow.
Kasan	29.32	744.7	29.58	751.3	63.7	17.6	68	NNE	2	1	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tschernischef.
Ekaterinburg	28.58	725.9	29.50	749.4	52.9	11.6	96	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.66	753.4	29.89	759.2	67.8	19.9	65	WNW	7	3	.....	.....	2k	.....	.....	.....	.....	.....	
Tashkend	28.41	721.6	30.07	763.6	72.0	22.2	56	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Michelson.
Barnaul	29.45	747.9	29.95	760.6	70.2	21.2	32	NE	0	0	.....	.....	4	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.83	757.7	30.12	765.0	55.0	12.8	72	S	2	1	.....	.....	5	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.77	756.1	29.91	759.7	69.6	20.9	80	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.93	760.1	30.02	762.6	81.5	27.5	58	SE	1.1	0.50	.....	.....	3	.....	.....	0	0	.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.04	763.1	30.10	764.5	74.5	23.6	77	N	1.0	0.45	.....	.....	10	.....	.....	0	0	Covered.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.17	690.0	.....	.....	77.4	25.2	60	N	5.9	2.64	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.84	707.2	29.92	759.9	92.1	33.4	33	S	5.2	2.33	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	29.87	758.7	30.01	762.3	92.1	33.4	44	NE	1.6	0.72	.....	.....	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.19	741.4	30.07	763.8	70.3	21.3	71	NE	17.9	8.00	.....	.....	4	.....	.....	0	0	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.70	754.3	29.76	756.0	83.0	28.3	75	NNW	11.6	5.2	.....	10cp	3n	.....	.....	0.165	4.2	Stormy.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.8	30.01	762.2	89.4	31.9	36	E	16.8	7.5	.....	1	2	E	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.5	29.99	761.8	78.1	25.6	90	SE	5.6	2.50	.....	6kn	4kn	SE	SE	0.030	0.75	Cloudy.....	Leonardo de Tejeda, Ch'f Eng't

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.07	763.8	30.11	764.9	57.6	14.2	.....	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	30.02	762.6	30.08	763.9	59.7	15.4	75	SW	.....	.....	2	.....	10	.....	.....	0.079	2.0	.....	
Hernosand	29.96	761.0	30.01	762.3	59.4	15.2	93	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.87	758.7	30.05	763.2	68.0	20.0	94	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	
Wisby	29.91	759.8	29.97	761.3	68.0	20.0	71	SSE	.....	.....	4	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.96	760.9	30.03	762.8	67.6	19.8	76	S	8.7	3.9	.....	.....	6	.....	SSW	0.141	3.58	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.67	728.2	30.04	763.1	73.0	22.8	62	N	.....	.....	2	.....	3	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.47	723.2	30.04	762.9	77.2	25.1	61	NE	.....	.....	2	.....	2	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.9 mm.; Thermometer, +3.4 cent.; Relative Humidity, +2 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.04	763.1	74.1	23.4	54	ENE	12	5.5	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.10	764.4	88.7	31.5	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.62	752.3	29.74	755.3	90.0	22.2	70	SW	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

CANADIAN SERIES.

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

Bathurst, N. B	30.42	772.7	30.49	774.4	55.9	13.3	70	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.97	761.2	30.27	768.8	58	14.4	.....	E	5	2.2	.....	.....	8s	.....	E	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.42	772.7	30.48	774.2	53	11.7	76	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.37	771.4	30.41	772.4	56	13.3	56	NE	12	5.4	.....	.....	8ks	.....	NE	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.10	764.5	30.29	769.4	54.0	12.2	87	E	.....	.....	2	.....	10s	.....	.....	0	0	Overcast	James Smith, M. A.
Dalhousie, N. B	30.34	770.6	30.50	774.7	50.2	10.1	84	W	.....	.....	3	.....	.....	.....	.....	0	0	Fine	H. A. Johnson.
Esquimault, B. C	30.21	767.3	30.26	768.6	46.3	7.9	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.47	773.9	30.50	774.7	47	8.3	88	SW	5	2.2	.....	2cs	0	Calm	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.44	773.2	30.50	774.7	54.5	12.5	71	NE	8	3.6	.....	1k	0	NE	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	29.12	739.6	29.93	760.2	53	11.7	90	W	6	2.7	.....	2ck	2s	W	W	0.040	1.02	Fair	James Stewart.
Granton, Ontario	29.11	739.4	30.18	766.6	67	19.4	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.22	767.6	30.35	770.9	56	13.3	70	NE	12	5.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.22	767.6	70.1	21.2	90	NE	.....	.....	2	10cs	.....	NE	.....	0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	30.17	766.3	30.19	766.8	48	8.9	60	NE	.....	.....	3	.....	10	.....	.....	0.12	3.0	Overcast	E. Weedon.
*Kingston, Ontario	29.94	760.5	30.26	768.6	68	20.0	89	NE	10	4.5	.....	5ck	5ks	Calm	Calm	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	NW	12	5.4	.....	5k	0	NW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.13	765.3	30.33	770.4	54	12.2	75	E	10	4.5	.....	2cs	0	.....	.....	0.01	0.3	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.51	749.5	30.19	766.8	68	20.0	90	SE	13	5.8	.....	5k	5ks	S	S	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.51	749.5	30.24	768.1	64.7	18.2	83	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.51	749.5	30.19	766.8	65	18.3	100	N	5	2.2	.....	5ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.30	769.6	30.35	770.9	59.5	15.3	.....	NW	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.53	750.0	30.16	766.1	69	20.6	95	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	30.13	765.3	30.45	773.4	56	13.3	87	NE	.....	.....	7	0	0	.....	.....	0.01	0.3	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.82	757.4	30.27	768.8	61	16.1	85	SE	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.39	771.9	30.44	773.2	53	11.7	76	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	30.32	770.1	30.49	774.4	51	10.6	86	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.46	748.3	30.14	765.5	70	21.1	84	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	29.43	747.5	30.18	766.6	70	21.1	90	SE	8	3.6	.....	.....	10n	.....	S	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.93	734.8	30.16	766.1	67.1	19.5	96	SE	5	2.2	.....	1c	2s	.....	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	30.31	769.9	30.34	770.6	54	12.2	67	N	13	5.8	.....	.....	10n	.....	NE	0.01	0.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.85	758.2	30.22	767.6	70	21.1	94	E	4	1.8	.....	5k	10n	W	E	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	78	NE	.....	.....	.....	.....	10	.....	.....	0.03	0.8	Overcast	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.05	763.3	30.28	769.1	66	18.9	89	Calm	0	0	.....	.....	10ks	.....	SE	0	0	Cloudy	
Alpena, Michigan	29.45	748.0	30.07	763.8	70	21.1	90	SE	4	1.8	.....	5cs	Haze	W	.....	0	0	Fair	
Atlantic City, New Jersey	30.21	767.3	30.23	767.8	72	22.2	85	E	20	8.9	.....	5k	0	E	.....	0.08	2.0	Fair	
Augusta, Georgia	29.93	760.2	30.11	764.8	75	23.9	90	NE	7	3.1	.....	8cs	Haze	SW	.....	0	0	Fair	
Baltimore, Maryland	30.18	766.6	30.23	767.8	71	21.7	85	E	5	2.2	.....	5k	Fog	E	Calm	0	0	Fair	
Barnegat, New Jersey	30.22	767.6	30.24	768.1	71	21.7	85	NE	18	8.0	.....	2k	5ks	E	E	0.01	0.3	Fair	
Bismarck, Dakota	28.11	714.0	29.97	761.2	49	9.4	93	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	
Boerne, Texas	28.58	725.9	.....	.....	77	25.0	86	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.20	690.9	30.16	766.1	52	11.1	59	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.21	767.3	30.37	771.4	59	15.0	94	NE	17	7.6	.....	.....	10n;fg	.....	NE; Calm	0.01	0.3	Light rain	
Brackettville, Texas	28.82	732.0	29.82	757.4	75	23.9	86	SE	1	0.4	.....	10cs	2s	SE	SE	0	0	Cloudy	
Breckenridge, Minnesota	28.91	734.5	29.90	759.4	50	10.0	100	S	7	3.1	.....	10k	0	W	.....	0	0	Cloudy	
Brownsville, Texas	29.91	759.7	29.98	761.5	77	25.0	95	Calm	.....	.....	0	0	5ks	.....	Calm	1.05	26.7	Fair	
Buffalo, New York	29.51	749.5	30.19	766.8	69	20.6	85	Calm	0	0	.....	10ck	0	Calm	.....	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	82	27.8	42	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.09	764.3	30.35	770.9	60	15.6	88	N	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Cairo, Illinois	29.62	752.3	30.00	762.0	74	23.3	76	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	55	12.8	73	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	67	19.4	46	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	66	18.9	64	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	40	4.4	71	E	2	0.9	.....	.....	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.13	765.3	30.14	765.5	76	24.4	82	NE	15	6.7	.....	2k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.13	765.3	30.16	766.1	73	22.8	90	N	19	8.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.10	764.5	30.11	764.8	75	23.9	86	NE	16	7.2	.....	2k	Haze	E	.....	0	0	Fair	
Cape May, New Jersey	30.20	767.1	30.23	767.8	71	21.7	90	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.20	741.7	29.87	758.7	77	25.0	86	SE	2	0.9	.....	.....	10s	.....	SE	0.04	1.0	Threatening	
Charleston, South Carolina	30.05	763.3	30.12	765.0	79	26.1	82	NE	13	5.8	.....	2cs	0	W	.....	0	0	Fair	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	46	7.8	54	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.36	745.7	30.02	762.5	72	22.2	71	SW	8	3.6	.....	5cs	Haze	Calm	.....	0	0	Clear	
Cincinnati, Ohio	29.45	748.0	30.08	764.0	70	21.1	80	E	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Cleveland, Ohio	29.45	748.0	30.15	765.8	67	19.4	84	SE	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
Coleman City, Texas	28.22	716.8	29.82	757.4	72	22.2	95	Calm	0	0	.....	0	8ks	.....	S	0.64	16.3	Fair	
Columbus, Ohio	29.30	744.2	30.10	764.5	74	23.3	63	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Concho, Texas	28.10	713.7	29.72	754.9	68	20.0	90	E	1	0.4	.....	0	10s	.....	E	1.12	28.4	Cloudy	
Corsicana, Texas	29.54	750.3	29.99	761.7	72	22.2	95	S	3	1.3	.....	2cs	0	Calm	.....	2.55	64.8	Clear	
Davenport, Iowa	29.39	746.5	30.00	762.0	69	20.6	80	Calm	0	0	.....	4cs	0	Calm	.....	0	0	Fair	
Decatur, Texas	28.85	732.8	29.97	761.2	74	23.3	86	E	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Denison, Texas	29.20	741.7	29.96	761.0	75	23.9	90	SE	2	0.9	.....	5ck	5s	SE	SE	0	0	Cloudy	
Denver, Colorado	24.89	632.2	30.11	764.8	53	11.7	67	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.08	738.6	29.92	760.0	75	23.9	68	W	1	0.4	.....	0	8s	.....	NW	0.12	3.0	Clearing	
Detroit, Michigan	29.47	748.5	30.12	765.0	70	21.1	90	Calm	0	0	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Dodge City, Kansas	27.46	697.5	29.70	754.4	61	16.1	94	Calm	0	0	.....	.....	8s	.....	S	0.01	0.3	Cloudy	
Dubuque, Iowa	29.30	744.2	29.97	761.2	70	21.1	75	S	2	0.9	.....	8k	Haze	S	Calm	0	0	Cloudy	
Duluth, Minnesota	29.27	743.4	29.92	760.0	62	16.7	88	SW	2	0.9	.....	.....	10n	.....	SW	0.57	14.5	Light rain	
Eagle Pass, Texas	29.20	741.7	29.92	760.0	72	22.2	90	NE	8	3.6	.....	.....	10s	.....	Calm	0.21	5.3	Cloudy	
Eastport, Maine	30.38	771.6	30.45	773.4	55	12.8	74	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	77	25.0	91	E	.....	.....	1	2ck	5s	Calm	Calm	0.06	1.5	Fair	
El Paso, Texas	.....	.....	.....	.....	76	24.4	72	W	4	1.8	.....	0	5s	.....	Calm	0.46	11.7	Fair	
Erie, Pennsylvania	29.46	748.3	30.15	765.8	71	21.7	80	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.37	746.0	30.00	762.0	71	21.7	85	SW	10	4.5	.....	2ck	5s	SW	SW	Inap.	Inap.	Cloudy	
Florence, Arizona	28.39	721.1	29.99	761.7	72	22.2	67	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.56	649.2	29.62	752.3	59	15.0	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.25	641.3	30.21	767.3	66	18.9	78	W	2	0.9	.....	5c	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.45	748.0	29.97	761.2	74	23.3	86	Calm	0	0	.....	5ck	2ks	Calm	SW	0	0	Fair	
Fort Griffin, Texas	28.72	729.5	29.95	760.7	72	22.2	80	Calm	0	0	.....	.....	10s	.....	W	0	0	Cloudy	
Fort McKavett, Texas	27.80	706.1	29.66	753.4	70	21.1	90	Calm	0	0	.....	.....	10s	.....	Calm	0.96	21.4	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.88	758.9	68	20.0	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	29.95	760.7	30.00	762.0	80	26.7	91	S	1	0.4	.....	0	5ks	.....	Calm	0	0	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.44	747.8	30.06	763.5	70	21.1	80	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.31	744.5	30.06	763.5	70	21.1	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	29.97	761.2	30.00	762.0	82	27.8	83	SE	5	2.2	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.85	732.8	29.93	760.2	74	23.3	90	Calm	0	0	.....	.....	10ks	.....	SW	0.23	5.8	Cloudy	
Jacksonville, Florida	30.00	762.0	30.02	762.5	82	27.8	83	NE	5	2.2	.....	2k	0	NE	.....	0.28	7.1	Fair	
Keokuk, Iowa	29.36	745.7	29.95	760.7	70	21.1	70	S	3	1.3	.....	2ck	1s;hz	S	Calm	0	0	Fair	
Key West, Florida	29.67	753.6	29.70	754.4	81	27.2	83	N	43	19.2	.....	.....	10n	.....	N	0.11	2.8	Light rain	
Kittyhawk, North Carolina	30.14	765.5	30.16	766.1	76	24.4	77	NE	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.15	740.4	30.12	765.0	71	21.7	80	Calm	0	0	.....	.....	10ks	.....	Calm	0	0	Cloudy	
La Crosse, Wisconsin	29.21	741.9	29.91	759.7	70	21.1	80	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	65	18.3	84	Calm	0	0	.....	5s	0	Calm	.....	0	0	Fair	
Laredo, Texas	29.50	749.3	29.83	757.7	78	25.6	91	E	4	1.8	.....	.....	10s	.....	Calm	0.69	17.5	Cloudy	
Lead City, Dakota	24.84	630.9	30.11	764.8	47	8.3	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.12	739.6	29.93	760.2	70	21.1	90	Calm	0	0	.....	2ck	8ks	S	Calm	0.01	0.3	Cloudy	
Los Angeles, California	29.58	751.3	29.91	759.7	63	17.2	85	W	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.53	750.0	30.07	763.8	70	21.1	70	N	2	0.9	.....	0	Sm'e	.....	N	0	0	Smoky	
Lynchburg, Virginia	29.55	750.6	30.21	767.3	71	21.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.26	743.2	29.93	760.2	70	21.1	85	S	9	4.0	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Mason, Texas	28.37	720.6	30.07	763.8	70	21.1	95	NW	2	0.9	.....	8ck	2s	Calm	S	0.22	5.6	Cloudy	
Memphis, Tennessee	29.72	754.9	30.04	763.0	71	21.7	75	NE	3	1.3	.....	5c	0	SW	.....	0	0	Fair	
Milwaukee, Wisconsin	29.34	745.2	30.04	763.0	71	21.7	80	SW	6	2.7	.....	5c	0	E	.....	0	0	Fair	
Mobile, Alabama	29.97	761.2	30.02	762.5	75	23.9	90	NE	8	3.6	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
Montgomery, Alabama	29.82	757.4	30.05	763.3	74	23.3	81	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.16	740.7	30.19	766.8	66	18.9	79	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	24.19	614.4	30.55	776.0	46	7.8	100	NW	9	4.0	.....	.....	Fog	.....	NW	0.17	4.3	Foggy	
Nashville, Tennessee	29.57	751.1	30.08	764.0	75	23.9	72	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
New Haven, Connecticut	30.20	767.1	30.32	770.1	67	19.4	84	NE	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
New London, Connecticut	30.27	768.8	30.32	770.1	65	18.3	89	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	80	26.7	78	NE	4	1.8	.....	Haze	0	Calm	.....	0.03	0.8	Clear	
Newport, Rhode Island	30.27	768.8	30.32	770.1	63	17.2	89	NE	9	4.0	.....	.....	10ks	.....	NE	0.01	0.3	Threatening	
New York, New York	30.11	764.8	30.28	769.1	69	20.6	90	NE	7	3.1	.....	1k	8ks	NE	NE	0	0	Fair	
Norfolk, Virginia	30.12	765.0	30.18	766.6	74	23.3	81	NE	9	4.0	.....	0	5s	.....	NE	0	0	Fair	
North Platte, Nebraska	27.12	688.8	29.63	752.6	58	14.4	88	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.26	768.6	30.30	769.6	41	5.0	100	S	2	0.9	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.87	733.3	29.90	759.4	66	18.9	95	W	2	0.9	.....	.....	10s	.....	Calm	0.74	18.8	Cloudy	
Oswego, New York	29.95	760.7	30.26	768.6	69	20.6	95	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pembina, Dakota	29.09	738.9	29.92	760.0	45	7.2	100	SE	3	1.3	.....	0	Fog	.....	Calm	Inap.	Inap.	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.24	768.1	30.29	769.4	67	19.4	95	NE	12	5.4	.....	.....	10s;fog	.....	E; Calm	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.73	729.7	.....	.....	68	20.0	70	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.98	454.8	30.19	766.8	33	0.6	51	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.12	612.6	29.89	759.2	61	16.1	21	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.39	746.5	30.18	766.6	65	18.3	89	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.48	748.8	30.12	765.0	70	21.1	90	SE	3	1.3	.....	0	Sm'e	.....	.....	0	0	Clear	
Portland, Maine	30.38	771.6	30.43	772.9	59	15.0	70	NE	11	4.9	.....	8k	2s	Calm	Calm	0.27	6.9	Cloudy	
Portland, Oregon	30.25	768.3	30.35	770.9	51	10.6	79	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Prescott, Arizona	24.89	632.2	30.25	768.3	50	10.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.23	742.4	30.02	762.5	76	24.4	81	S	1	0.4	.....	8ck	0	SE	.....	0	0	Cloudy	
Punta Rassa, Florida	29.86	758.4	29.87	758.7	80	26.7	82	NE	18	8.0	.....	5cs	2s	NE	NE	0.06	1.5	Fair	
Red Bluff, California	29.56	750.8	29.91	759.7	70	21.1	40	N	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.77	756.1	29.98	761.5	77	25.0	91	SE	7	3.1	.....	.....	10s	.....	SE	0.45	11.4	Cloudy	
Rochester, New York	29.63	752.6	30.22	767.6	69	20.6	90	SE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Roseburg, Oregon	29.72	754.9	30.30	769.6	51.5	10.8	76	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.83	757.7	29.91	759.7	61	16.1	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.04	763.0	72	22.2	67	SE	4	1.8	.....	5ck	0	Calm	.....	0	0	Fair	
St. Marks, Florida	30.00	762.0	30.02	762.5	76	24.4	91	NE	8	3.6	.....	2ck	5s	Calm	Calm	0.02	0.5	Fair	
St. Paul, Minnesota	29.05	737.9	29.84	757.9	67	19.4	90	SW	6	2.7	.....	.....	10n	.....	.....	0.56	14.2	Light rain	
Salt Lake City, Utah	25.65	651.5	29.98	761.5	54	12.2	55	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.30	744.2	29.86	758.4	75	23.9	95	Calm	0	0	.....	2ck	5ks	Calm	SE	0.02	0.5	Cloudy	
San Diego, California	29.87	758.7	29.94	760.5	64	17.8	89	NW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.51	749.5	30.16	766.1	71	21.7	80	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.24	768.1	30.28	769.1	71	21.7	85	E	10	4.5	.....	2k	0	E	.....	0	0	Fair	
San Francisco, California	29.88	758.9	29.95	760.7	53	11.7	97	SW	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	50	10.0	52	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	79	26.1	91	NE	7	3.1	.....	5cs	5ks	SW	NE	0.04	1.0	Cloudy	
Shreveport, Louisiana	29.78	756.4	29.99	761.7	77	25.0	86	Calm	0	0	.....	1c	0	W	.....	0.14	3.6	Clear	
Silver City, New Mexico	24.35	618.5	.....	.....	55	12.8	87	Calm	0	0	.....	5k	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.12	765.0	30.15	765.8	75	23.9	86	NE	9	4.0	.....	0	1ks	.....	NE	0	0	Clear	
Springfield, Massachusetts	30.23	767.8	30.36	771.1	63	17.2	78	NE	6	2.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Stockton, Texas	26.96	684.8	29.96	761.0	66	18.9	58	SE	4	1.8	.....	4k	Haze	Calm	.....	0.16	4.1	Fair	
Thatcher's Island, Mass	30.32	770.1	30.38	771.6	60	15.6	94	E	28	12.5	.....	.....	10n	.....	E	0.03	0.8	Light rain	
Toledo, Ohio	29.46	748.3	30.10	764.5	72	22.2	76	N	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Tucson, Arizona	27.29	693.2	29.84	757.9	70	21.1	68	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.05	763.3	30.08	764.0	82	27.8	79	E	21	9.4	.....	.....	10ks	.....	E	0.68	17.3	Cloudy	
Umatilla, Oregon	29.87	758.7	.....	.....	51	10.6	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	100	SE	.....	.....	4	.....	10n	.....	SE	0.33	8.4	Raining	
Uvalde, Texas	29.09	738.9	29.87	758.7	77	25.0	86	Calm	0	0	.....	.....	10s	.....	E	0	0	Cloudy	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.23	615.4	29.71	754.6	47	8.3	62	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.56	750.8	29.93	760.2	59	15.0	65	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.12	765.0	30.23	767.8	70	21.1	90	NE	2	0.9	.....	0	Fog	.....	Calm	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	63	17.2	78	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.06	763.5	30.14	765.5	73	22.8	85	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	53	11.7	25	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.26	768.6	30.32	770.1	66	18.9	94	NE	2	0.9	.....	.....	10s	.....	NE	0	0	Threatening	
Yankton, Dakota	28.71	729.2	29.97	761.2	58	14.4	91	SW	1	0.4	.....	0	2s	.....	SE	0.08	2.0	Fair	
Yuma, Arizona	29.62	752.3	29.78	756.4	71	21.7	71	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.96	761.0	30.01	762.2	32.0	0.0	94	N	5	2.2	.....	2k	0	NE	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.76	755.9	29.78	756.4	84	28.9	75	NW	16.8	7.5	.....	.....	10n	.....	NW	0.14	3.6	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.88	758.9	29.91	759.7	83	28.3	87	SE	6	2.7	.....	4c	4k	SE	SE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	76	24.4	91	Calm	0	0	.....	.....	10n	.....	.....	2.1	53.3	Raining	G. O. Gellich.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	83	28.3	91	SE	18	8.0	.....	5c	5ks	NW	SE	0.63	16.0	.....	James Gall.
Navassa, W. I.	29.86	758.4	29.94	760.5	82.5	28.1	.....	E	14.2	6.3	.....	.....	.....	.....	.....	0.28	7.1	Hazy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	84	28.9	75	E	.....	.....	1	3c	5k	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.27	641.8	.....	.....	66.0	18.9	85	Calm	0	0	.....	.....	10ks;n	.....	.....	0.50	12.7	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.7 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,256 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.15	765.8	79	26 1	79	26.1	82	NE	6	2.7	.....	.....	8	.....	NE	0	0	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	30.39‡	771.9‡	.....	.....	57	13.9	81	NE	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.96*	761.9*	77.3	25.2	77	25.0	86	E	.....	.....	3	.....	7ck	.....	W	0	0	.....	.....	Fair	
Adams. S. 31° 51′, W. 168° 13′	30.36	771.1	65	18.3	57	13.9	87	ESE	.....	.....	3	.....	5?	.....	SE	0	0	Long	SW	Clear?	
Alliance, Villafranca, France	30.02‡	762.5‡	.....	.....	80	26.7	63	S	.....	.....	0–1	.....	4	.....	W	.....	.....	None	.....	Hazy	
Ashuelot. Yokohama, Japan	30.03	762.7	79	26.1	76	24.4	95	NE	.....	.....	3	.....	5	.....	NE	.....	.....	Smooth	N	Hazy	
Alaska, S. 51° 18′, W. 74° 04′	29.89	759.2	54	12.2	44	6.7	76	N	.....	.....	3	.....	10	.....	S	0.38	8.4	Smooth	.....	Misty	
Canonicus, New Orleans, La	30.01	762.2	57	13.9	79	26.1	91	NE	.....	.....	5	.....	6	.....	NE	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.29‡	769.4‡	.....	.....	70	21.1	90	E	2	0.9	.....	.....	8	.....	E	0	0	.....	.....	Foggy	
Constitution, Havre, France	30.13‡	765.3‡	.....	.....	66	18.9	94	W	.....	.....	2	.....	5	.....	NE	.....	.....	.....	.....	Pleasant	
Despatch, Constantinople, Turkey	30.08‡	764.0‡	.....	.....	74	23.3	68	NE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.28	769.1	77	25.0	75	23.9	90	NNE	8.5	3.8	.....	.....	2	.....	N	0	0	.....	.....	Clear	
Gettysburg Villafranca, France	30.03‡	762.7‡	.....	.....	84	28.9	91	S	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Clear	
Guard, Bahia, Brazil	30.21	767.3	76	24.4	76	24.4	73	ENE	.....	.....	4	.....	10	.....	ENE	.....	.....	.....	.....	Misty	
Hartford, Rio de Janeiro, Brazil	30.36	771.1	.....	.....	63	17.2	89	SW	0.6	0.3	.....	.....	10	.....	.....	0.63	16.0	.....	.....	Rainy	
Marion, Leghorn, Italy	30.13	765.3	76	24.4	77	25.0	69	NNW	.....	.....	3	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa	29.72	754.9	72	22.2	71.5	21.9	??	SE	.....	.....	3	.....	1	.....	SE	.....	.....	.....	.....	Clear	
Monocacy. Ura-no-go-ura, Japan	29.93‡	760.2‡	.....	.....	78	25.6	86	NE	.....	.....	1–3	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.28†	769.1†	.....	.....	80	26.7	82	NE	15	6.7	.....	.....	8	.....	E	0	0	.....	.....	Fair	
Onward, Callao, Peru	30.14†	765.5†	.....	.....	62	16.7	83	E	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.34	770.6	71	21.7	69	20.6	100	NE	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Clear	
Palos, Tientsin, China	30.00	762.0	73	22.8	71	21.7	75	ESE	.....	.....	3	.....	8	.....	.....	.....	.....	.....	.....	Misty	
Plymouth. New York, N. Y.	30.27	768.8	71	21.7	71	21.7	90	ENE	.....	.....	1	.....	9	.....	NE	.....	.....	.....	.....	Cloudy	
Ranger, Hong-Kong, China	29.93	760.2	87	30.6	87	30.6	83	SW	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.91	759.7	80	26.7	79	26.1	95	Calm	.....	.....	0	.....	2	.....	S	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.21‡	767.3‡	.....	.....	73	22.8	90	N	.....	.....	1	.....	8	.....	NNE	0	0	.....	.....	Cloudy	
Saratoga, New York, N. Y.	30.35*	770.9*	.....	.....	68	20.0	90	ENE	.....	.....	2	.....	6	.....	W	0	0	.....	.....	Hazy	
St. Louis, League Island, Pa	30.15	765.8	72	22.2	68	20.0	95	NE	9	4.0	.....	.....	10	.....	Calm	0	0	.....	.....	Foggy	
Supply, Havre, France	30.25	768.3	70	21.1	64	17.8	94	NW	.....	.....	3	.....	8	.....	NW	.....	.....	.....	.....	Misty	
Swatara, Boston, Mass.	30.31‡?	769.9‡?	.....	.....	62	16.7	88	NNE	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Trenton, Southampton, England	30.13‡	765.3‡	.....	.....	69	20.6	80	SE	.....	.....	0–1	.....	5	.....	S;E	0	0	.....	.....	Fair	
Tuscarora, La Paz, Mexico	29.69	754.1	75	23.9	78	25.6	82	S	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Vandalia, Villafranca, France	30.01‡	762.2‡	.....	.....	81	27.2	66	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.31‡?	769.9‡?	.....	.....	58	14.4	100	NE	8	3.6	.....	.....	10	.....	Calm	0	0	.....	.....	Misty	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co'peration of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Nanaimo, B. C.		30.33*	770.4*				NW			3		3		NW				Fair	Capt. Seabury.
S. S City of Peking, N. 36° 45′, E. 166° 40′		30.23†	767.8†	75	23.9	??	W	6	2.7			3		E		Small	SE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 18° 38′ W. 104° 2′		29.96†	761.0†	82	27.8	96	NNE			3		6		Calm	0	Con-fused	SSE;E	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.93†	760.2†	64	17.8	83	S			1		Fog			0			Dense fog	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.65*	753.1*	86	30.0	87	SW			3		ks		SW				D. clouds	Capt. L. Myer.
S. S. Gaelic, Yokohama, Japan		29.82†	757.4†	84	28.9	79	Var.			3		s		N		Heavy			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 38° 8′, W. 69° 52′		30.11	764.8	76.5	24.7	86	NE			6		5		NE	1 hour	5	NE	Squally	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																		Captain Shackelford.	
S. S. Indiana, Philadelphia, Pa		30.30*	769.6*	73	22.8	95	ENE			1		9		NE	0			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		30.13	765.3	71	21.7	85	N			1		10		Calm				Dull	Captain Morrison.
S. S. Pennsylvania, N. 39° 33′, W. 73° 06′		30.17†	766.3†	71	21.7	100	NE			5		9		NE	Blank	Light	NE	Cloudy	Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																		Capt. Rundle.	
S. S. Switzerland, N. 46° 16′, W. 44° 18′		29.91*	759.7*				W	10	4.5		10		N		Heavy	SW	Raining	Capt. Jackson.	
S. S. Vaderland																		Capt. Nichols.	

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 36° 29′, W. 72° 52′		30.06	763.5	78	25.6	77	NE	12	5.4			8k		NE	0	Short		Cloudy	Capt. James Jorgensen.
Schooner Florence, Niantlic		29.69*	759.2*	42.1	5.6		W			3.5	3c	7ks		NW	0.31 in or 7.9 mm.			Raining	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 8, 1878.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.00	762.0	71.2	21.8	89	NE			5		3					Pretty fair	Dr. Ollive.
Nemours			29.97	761.2	78.4	25.8	78	WNW			1		3					Pretty fair.	Kesxuche.
Algiers			29.96	760.9	82.0	27.8	68	N			2		0			0	0	Clear	Tourillere.
La Calle			29.95	760.8	80.1	26.7	77	N			5		3			0.591	15.0	Pretty fair	Foufrede.
Tunis			29.87	758.6	75.4	24.1	67	WNW			5		0			0.161	4.1	Clear	Jacques.
Sfax			29.98	761.5	80.6	27.0		NNW			3		7			0.118	3.0	Very cloudy	Gau.
Saida			29.99	761.7	83.1	28.4	27	N			1		1			0	0	Very fair	Herbin.
Tebessa			29.96	761.0	73.4	23.0	31	N			6		4			0	0	Cloudy	Watrin.
Geriville			29.98	761.5	92.1	33.4	18	N			1		1			0	0	Very fair	Brugnlaux.
Laghouat			30.08	764.1	84.2	29.0	17	E			1		0			0	0	Clear	Bertrand.
Biskra			30.03	762.8	91.4	33.0	25	ESE			1		1			0	0	Very fair	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.45	748.1	29.97	761.3	82.0	27.8	57	SE			1		3			0	0		Prof. Ivan Stozi
Cracow, I. R. Observatory	29.25	743.0	29.99	761.7	75.6	24.2	62	WSW			1		2			0	0		Dr. Wiersbiski
Eperies	29.11	739.5	29.95	760.7	77.4	25.2	68	Calm			0		6cs			0	0		Julius Mikolik.
Gratz	28.77	730.7	29.97	761.1	74.7	23.7	66	SSE			2		8			0	0		Andreas Rospini.
Hermannstadt	28.56	725.2	29.97	761.1	76.5	24.7	56	NW			1		1			0	0		Prof. A. Gottschling.
Kremtmünster	28.61	726.8	29.89	759.2	75.9	24.4	57	ENE			3		0			0	0		Prof. C. Wagner
Lemberg	28.95	735.2	29.89	759.3	72.0	22.2	69	S			2		8			0.091	2.3		Dr. T. Stanecki.
Pola	29.82	757.3	29.92	760.0	80.8	27.1	64	WNW			2		1k			0	0		I.R.Hydrographic Office
Szathmar	29.55	750.5	29.98	761.6	83.5	28.6	63	NE			1		7			0	0		Julius Osics, S. J.
Szegedin	29.67	753.6	29.94	760.4	79.7	26.5	72	W			1		8			0	0		Karl Stancel.
Trieste	29.84	758.0	29.95	760.6	84.6	29.2	59	ENE			2		0			0	0	Fair	P. Busin.
Vienna	29.28	743.8	29.97	761.1	79.6	26.4	55	E			1		0			0	0		I. R. Central Met.Obs'y.

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.92	760.0	30.01	762.2	60.2	15.7	.....	S	16	7.2	.....	.....	9	.....	.....	0.390	9.91	Overcast.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Carrick.
Armagh, Observatory	.....	.....	30.04	763.0	64.0	17.8	.....	SW	5	2.2	.....	.....	.....	.....	.....	.....	.....	.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.04	763.0	60.0	15.6	.....	WNW	10	4.5	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.82	757.4	29.85	758.2	83	28.3	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.01	762.2	67.0	19.4	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	30.03	762.7	65.0	18.3	.....	W	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.88	758.9	30.01	762.2	71.7	22.1	.....	Calm	.....	.....	0	.....	7	.....	.....	.....	.....	D. clouds.....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.68	728.5	30.12	765.0	65.0	18.3	.....	W	.....	.....	3	.....	4	.....	.....	Blank	Blank	Fine	Alexander Watt.
Donaghadee	30.00	762.0	30.03	762.7	62	16.7	.....	SSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.93	761.5	30.01	762.2	68	20.0	.....	WSW	.....	.....	2	.....	2	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.02	762.5	63.0	17.2	.....	NE	.....	.....	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	.....	.....	.....	.....	66.0	18.9	.....	NW	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.75	704.8	30.06	763.5	67.4	19.7	.....	S	.....	.....	3	.....	1	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.82	757.4	30.05	763.3	76	24.4	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	Raining.....	
Galway, Queen's College	.....	.....	29.97	761.2	62	16.7	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.85	758.2	29.91	759.7	.....	.....	.....	E	.....	.....	5	.....	6	.....	.....	Blank	Blank	D. clouds....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.81	757.2	30.02	762.5	66.9	19.4	.....	W	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.03	762.7	63	17.2	.....	ESE	.....	.....	2	.....	8	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.84	757.9	30.02	762.0	75.8	24.3	.....	WSW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.86	758.4	30.07	763.8	64.5	18.1	.....	NW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.13	765.3	69	20.6	.....	N	.....	.....	0	.....	2c	.....	.....	0.11	2.8	Fine	M. P. Moyle.
Holyhead	30.00	762.0	30.05	763.3	62	16.7	.....	WNW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.82	757.4	30.11	764.8	66.9	19.4	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	J. Fisher.
Kew, Observatory	29.97	761.2	30.01	762.2	62.0	16.7	.....	NW	3	1.3	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
Kingstown	30.04	763.0	30.07	763.8	64	17.8	.....	NW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	30.02	762.5	60.4	15.8	.....	NW	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.53?	750.0?	29.60?	751.8?	81	27.2	.....	SW	.....	.....	1	.....	6cs	.....	.....	.....	.....	Overcast.....	Sergt. Beckett.
Nairn	29.86	758.4	29.93	760.2	68	20.0	.....	SW	.....	.....	1	.....	2	.....	.....	.....	.....	¼ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.87	758 7	82.5	28.1	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.85	758.2	30.04	763.0	66.8	19.3	.....	N	.....	.....	1	.....	10k	.....	NNE	0.107	2.72	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.50	749.3	30.02	762.5	60.1	15.6	.....	W	.....	.....	1	.....	9	.....	.....	.....	.....	Foggy	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.03	762.7	66	18.9	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Plymouth	29.99	761.7	30.07	763.8	67.6	19.8	.....	NE	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	30.05	763.3	30.10	764.5	66	18.9	.....	WSW	.....	.....	3	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.93	760.2	63	17.2	.....	SSE	18	8.0	.....	.....	5	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.93	760.2	80.8	27.1	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	29.79	756.7	30.06	763.5	61.9	16.6	.....	ENE	.....	.....	1	.....	10	.....	.....	0	0	Misty.....	W. F. Cooper.
Silloth Rectory	29.98	761.5	30.01	762.2	71.3	21.8	66	Calm	.....	.....	0	.....	3	.....	.....	0.05	1.27	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.63	752.6	30.04	763.0	65.0	18.3	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.82	757.4	30.03	762.7	69.3	20 7	.....	W	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.90	759.4	68	20.0	.....	S	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.11	764.8	72	22.2	.....	NW	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.11	764.8	63.8	17.7	.....	SW	16	7.2	.....	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.84	757.9	62.0	16 7	82	N	.....	.....	1	.....	10k	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.6	70.0	21.1	64	ESE	18.5	8.3	.....	0	6	.....	.....	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	65.0	18.3	55	NNE	28	12.5	.....	.....	9	.....	.....	0.04	1.0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 33° 50', W. 20° 35'	3	N	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 38° 5', W. 72° 15'	6	NE	Squally.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26 25	666.7			67.6	19.8	92	NE			1	3c;ck	4cs			Inap.	Inap.		Mr. Ansart. Federico Maison.

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

DANISH SERIES.

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

Copenhagen	30.00	761.9	30.04	763.1	64.8	18.2	77	NW			2		10						
Fanöe	30.03	762.7	30.05	763.2	66.4	19.1	80	WSW			2		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.67	751.0	29.60	751.9	55.2	12.9	94	SSW			6		10						
Vestervig	29.86	758.5	30.03	762.8	64.8	18.2	86	W			4		4					Raining	

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

FRENCH SERIES.*

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

Alençon, Normal School	29.52	749.9	30.08	763.9	72.0	22.2	74	NE			1		8			0.016	0.4	Very cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.85	758.2	29.93	760.2	87.4	30.8	49	NNW			1		0			0	0	Very clear.	M. Giraud, Director.
Bar-sur-Seine	29.47	748.4	30.00	761.9	75.4	24.1	66	NE			2		5k		NE	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.77	756.2	30.05	763.3	70.7	21.5	67	WNW			1		10		SW	0	0	Covered	Frere Eugene Marie, Director.
Besançon	29.23?	742.4?	30.10?	764.5?	76.1	24.5	67	S			1		5		SE	0	0	Cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.51	749.5	30.04	763.1	72.5	22.5	66	NW			1		2k		NW	0	0	Slightly cov.	A. Wagner, Director.
Brest, Naval Observatory	29.81	757.2	30.06	763.4	74.5	23.6	72	SW			1		4k		SW	0	0		The Staff.
Carcassonne, Normal School	29.62	752.4	30.02	762.6	73.0	22.8	77	W			1		2		W	0	0	Slightly cl'dy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.51	749.5	30.05	763.3	76.6	24.8	80	NW			2		4	SE	SE	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.69	754.0	29.99	761.8	76.1	24.5	88	S			1		8	W	W	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.69	728.8	29.98	761.6	77.5	25.3	54	NE			1		5		W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.15	740.4	30.00	761.9	72.0	22.2	89	W			1		2kn		W	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.88	733.5	30.02	762.5	86.0	30.0	36	NW			2		8	SE		0	0	¾ covered	M. King.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	29.95	760.6	30.16	766.0	70.9	21.6	67	W			3		5		W	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.74	755.4	30.04	763.1	71.4	21.9	74	N			3		5		SE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.18	741.1	30.07	763.6	69.1	20.6	85	SW			2		5		SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.05	763.2	30.08	764.0	75.6	24.2	93	W			1		0			0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	29.01	736.8	30.01	762.3	74.1	23.4	77	N			1		2k		SW	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.75	755.6	29.97	761.1	88.5	31.4	68	N			4		0			0	0		Boyer, Director.
Privas, Normal School	28.95	735.4	29.97	761.1	81.5	27.5	47	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.28	642.1			56.8	13.8	80	W			1		8			0	0	Very cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.07	763.8	30.10	764.6	73.9	23.3	70	WNW			2		10	WNW	WNW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.97	761.1	30.05	763.2	68.5	20.3	82	W			1		10		SW	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			30.08	764.1	66.2	19.0	72	NNW			3		1		NNW	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	28.97	735.9	30.02	762.6	68.0	20	81	W			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										5.24	133.		L'Abbé Marchés.
Lyons			29.94	760.4	78.3	25.7	63						1			0	0		L. Jays.
Marseilles, Observatory			29.94	760.4	82.4	28.0	50	SW			1–2		1			0	0	Clear	The Staff.
Mont-Louis	25.01	635.3	30.33	770.3	65.1	18.4	42	NNE			1		5		SW	0	0		M. Cave.
Nice			29.96	761.0	78.4	25.8	70	S			1		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.76	755.9	30.04	762.9	75.4	24.1	61	WNW			2		5		W	0	0		Marié Davy, Director.
Perpignan			29.96	761.0	83.5	28.6	50	N	14.9	6.66			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	576.0			54.9	12.7		SW			1		10			0	0	Cloudy	Gen'l de Nansouty
Saint Maur, (near Paris)	29.86	758.5	30.03	762.7	72.9	22.7	56	WNW			1		4		WSW	0	0	Fair	E. Renou.
Toulouse, Observatory	29.39	746.5	30.11	764.9	73.8	23.2	55	NNW			2		5			0	0		The Staff.
Tours	29.83	757.7	30.03	762.7	75.2	24.0	64	SE			1		5		NNW				C. Marquet.
Versailles			30.04	763.1	73.8	26.0	36	NE			1		9			0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.83	757.6	29.85	758.3	70.5	21.4	96	ENE	2.5	1.1		2c				0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.15	740.5	30.00	761.9	76.3	24.6	60	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	29.90	759.4	30.07	763.7	68 0	20.0	56	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.53	750.1	30.07	763.6	70.9	21.6	60	WNW	.....	.....	3	.....	0	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.53	750.1	29.94	760.4	77.9	25.5	70	NE	.....	.....	1	.....	0	.....	.....	0.315	8.0	.....	Albert Senz.
Cassel	29.41	747.0	30.02	762.4	77.5	25.3	60	NNE	.....	.....	2	.....	2	SE	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.83	757.7	29.99	761.8	72.5	22.5	77	NW	.....	.....	1	.....	9	.....	.....	0	0	Foggy	Director Lose.
Emden	29.99	761.8	30.03	762.7	69.1	20.6	69	E	.....	.....	1	.....	1	.....	.....	0.004	0.1	.....	Prof. Prestel.
Frankfort on the Main	29.63	752.5	29.97	761.3	78.8	26	.....	NNE	.....	.....	1	.....	1	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.58	726.0	29.97	761.3	69.1	20.6	83	SW	.....	.....	2	.....	0?	.....	.....	0.201	5.1	Thunder-storm.	M. Wilhelm.
Hamburg	30.01	762.2	30.08	763 9	67.3	19.6	76	E	.....	.....	1	.....	8k	.....	.....	0	0	Dust-Haze.	Captain F. Hegemann.
Kiel	30.06	763.4	30.07	763.8	63.9	17.7	76	NNE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.86	758.5	29.95	760.6	67.1	19.5	61	W	.....	.....	3	.....	4	.....	.....	0.012	0.3	.....	Prof. E. Luther.
Köslin	.....	.....	30.00	762.1	65.8	18.8	.....	N	.....	.....	2	.....	2	.....	.....	0.098	2.5	.....	H. Müller.
Leipsic, Observatory	29.67	753.5	30.07	763.8	73.0	22.8	59	ENE	.....	.....	2	.....	2	.....	.....	0.012	0.3	.....	Prof. Bruhns.
Memel, Naval School	29.90	759.4	29.95	760.6	66.9	19.4	82	WNW	.....	.....	2	.....	10ks	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.98	761.5	30.00	761.9	65.5	18.6	84	NNE	.....	.....	1	.....	10	WNW.	.....	0	0	.....	A. Lothes.
Posen	29.79	756.6	30.07	763.7	69.8	21.0	59	NW	.....	.....	5	.....	8	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.46	748.3	29.99	761.8	74.1	23.4	80	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.04	737.7	29.94	760.4	77.0	25.0	59	E	.....	.....	1	.....	1	.....	.....	0.295	7.5	.....	Prof. Schoder.
Treves, (Trier)	29.43	747.4	29.95	760.6	78.8	26.0	62	WNW	.....	.....	4	.....	9	.....	.....	0.021	0.52	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.50	723.8	29.95	760.7	78.1	25.6	53	ENE	2.0	0.9	.....	.....	4ck	.....	NNE	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.08	763.9	30.11	764.9	66.2	19.0	80	N	.....	.....	2	.....	10	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.56	750.9	29.94	760.4	84.9	29.4	.....	NE	.....	.....	3.0	.....	.....	.....	.....	.....	.....	Clear.	Dr. J. F. J. Schmidt.
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.55	750.5	29.60	751.7	92.3	33.5	56	E	28?	12.5?	.....	.....	10	.....	.....	0.03	0.8	Thunder-storm.	
Deesa	29.21	741.8	29.37	753.7	86.5	30.3	80	ENE	.....	.....	.....	.....	7	.....	ENE	0	0	Threatening	
Bombay	29.64	752.8	29.68	753.8	79.1	26.2	94	S	30	13.4	.....	.....	10	.....	SE	1.02	25.9	Raining	
Poona	27.71	703.8	29.70	754.5	77.2	25.1	80	SSW	.....	.....	.....	.....	10	.....	SSW	0	0	D. clouds	
Lahore	28.95	735.3	29.68	753.8	88.1	31.2	68	Calm	1.1	0.5	.....	.....	2	.....	.....	0	0	Blue sky	
Belgaum	27.26	692.5	29.83	757.6	69.7	20.9	91	WSW	20	8.9	.....	.....	9	.....	WSW	0.22	5.6	Showery	
Roorkee	28.75	730.3	29.63	752.6	87.8	31.0	78	Calm	5	2.2	.....	.....	4	.....	.....	0	0	.....	
Agra	29.11	739.3	29.67	753.5	82.7	28.2	91	N	.....	.....	.....	.....	10	.....	W	0	0	.....	
Nagpur	28.66	727.8	29.68	754.0	85.6	29.8	69	SSW	3.4	1.5	.....	.....	6	.....	NE	0	0	D. clouds	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.31	744.5	29.62	752.3	88.3	31.3	86	Calm	0.7	0.3	.....	.....	10	.....	.....	0	0	Overcast	
Patna	29.47	748.6	29.65	753.2	86.6	30.3	81	Calm	0.9	0.4	.....	.....	8	E	E	0	0	D. clouds	
Hazaribagh	27.68	703.0	29.66	753.5	81.8	27.7	79	Calm	5.8	2.6	.....	.....	7	.....	.....	0.01	0.3	Thunder-storm	
Cuttack	29.58	751.4	29.66	753.4	84.8	29.3	77	SE	1.2	0.5	.....	.....	3	.....	.....	0	0	D. clouds	
Calcutta (Alipore)	29.67	753.7	29.70	754.3	84.0	28.9	89	SSW	2.0	0.9	.....	.....	2	S	S	0	0	D. clouds	
Goalpara	29.34	745.2	29.73	755.0	79.8	26.6	91	SW	2.5	1.1	.....	.....	9	SW	.....	0.16	4.1	D clouds	
Chittagong	29.69	754.0	29.78	756.3	84.4	29.1	87	SSW	5.9	2.6	.....	.....	3	.....	.....	0	0	Misty	
Sibsagar	29.40	746.6	29.73	755.1	81.2	27.3	86	NW	2.6	1.2	.....	.....	10	W	W	0.77	19.6	Gloomy	
Jubbulpore	28.31	719.0	29.66	753.2	82.8	28.2	79	NW	4.5	2.0	.....	.....	9	.....	.....	0	0	Overcast	
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.58	751.2	29.97	761.2	82.2	27.9	34	E	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.86	758.5	29.97	761.2	82.0	27.8	39	ENE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.82	757.3	30.00	762.0	82.6	28.1	35	NE	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.70	728.9	29.97	761.1	83.1	28.4	48	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.48	748.9	29.98	761.6	80.1	26.7	51	E	.....	.....	1	.....	1	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.09	738.8	29.96	761.0	81.0	27.2	46	WNW	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.12	714.1	29.96	761.0	76.6	24.8	48	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.73	755.2	29.95	760.6	84.2	29.0	42	SSW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.75	755.6	29.91	759.7	85.3	29.6	46	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.65	753.1	29.95	760.8	82.2	27.9	42	E	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.66	753.3	29.91	759.6	90.5	32.5	26	E	.....	.....	2	.....	8	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.82	757.5	29.91	759.6	79.5	26.4	58	W	7.4	3.3	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.91	759.6	29.95	760.8	76.6	24.8	69	N	.....	.....	.....	.....	5	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.48	723.4	29.99	761.7	75.4	24.1	57	NE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.76	756.0	29.93	760.3	77.7	25.4	60	N	7.4	3.3	.....	.....	10	.....	.....	0.008	0.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.70	754.4	29.89	759.3	88.3	31.3	39	S	.....	.....	2	.....	7	SE	.....	0.031	0.8	.....	Prof. L. Palmieri.
Lecce	29.64	752.9	29.89	759.1	83.1	28.4	60	N	12.5	5.6	.....	.....	6	N	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.69	754.0	29.87	758.7	78.6	25.9	57	W	.....	.....	2	.....	9	NE	.....	0.020	0.5	.....	Prof. A. Pacinotti.
Cosenza	29.04	737.5	29.92	760.0	79.5	26.4	70	SW	.....	.....	1	.....	10	.....	.....	0.051	1.3	.....	Prof. F. D. Conti.
Palermo	29.58	751.3	29.82	757.5	72.1	22.3	88	Calm	0	0	.....	.....	10	.....	.....	0.114	2.9	.....	Prof. G. Cacciatore.
Syracuse	29.81	757.2	29.89	759.1	79.7	26.5	77	SSW	4.9	2.2	.....	.....	7	SE	.....	0.374	9.5	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.36	745.7	29.87	758.8	86.2	30.1	49	SSW	2.5	1.1	.....	.....	6	W	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.68	753.9	29.88	758.9	77.5	25.3	87	SE	2.7	1.2	.....	.....	8ck;ks	.....	SE	0.275	6.99	Cloudy	
Tokei (Yeddo) Observatory.	30.01	762.2	30.07	763.8	71.4	21.9	78	NNE	7.7	3.4	.....	.....	10s	.....	.....	0.380	9.65	Cloudy.....	I. Arai, Director.
Tokei (Yeddo) University..	29.96	761.0	30.06	763.5	71.3	21.8	87	N	3.2	1.4	.....	.....	9s	.....	.....	.....	.....	Raining	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Cuernavaca	.....	.....	.....	.....	64.4	18.0	91	N	.....	.....	1	7ck	0	E	.....	0.630	16.0	½ cloudy.....	P. Ceballos.
Guadalajara	25.09	637.2	30.05	763.2	58.1	14.5	89	SE	.....	.....	1	0	1ks	.....	SE	0.835	21.2	Clear	Prof. L. Perez.
Guanajuato	23.73	602.8	29.88	758.9	63.0	17.2	82	Calm	.....	.....	.....	4	0	.....	.....	0	0	½ cloudy.....	F. Ortiz.
Leon	24.44	620.7	29.94	760.4	63.3	17.4	92	S	.....	.....	3	0	10m	.....	Calm	Inap	Inap.	Covered	Prof. M. Leal.
Mexico	23.13	587.5	30.11	764.7	58.6	14.8	92	Calm	0	0	.....	0	3k	.....	.....	0.24	6.0	.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	62.8	17.1	90	Calm	.....	.....	0	2c	3ks	.....	.....	0.020	0.5	½ cloudy.....	M. V. de Leon, M. E
Puebla	23.38	593.8	30.03	762.8	55.8	13.2	86	NE	2.7	1.2	.....	3cn	5ns	.....	.....	0.01	0.35	Cloudy.....	Prof. B. Gonzalez.
Tlacotalpam	29.92	760.0	29.93	760.3	77.9	25.5	91	SW	.....	.....	1	5cs	0	.....	.....	0	0	Fair.....	M. M. Cházaro.
San Luis Potosi	24.12	615.1	30.14	765.6	62.0	16.7	57	SE	3.1	0.4	.....	4	2	N	.....	0	0	½ cloudy....	G. Barroeta, M. D.
Vera-Cruz	29.95	760.7	29.98	761.4	80.6	27.0	84	NW	.....	.....	.....	0	1ks	.....	.....	0	0	Blue sky.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	51.8	11	78	NE	.....	.....	2	0	4	.....	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute).	23.28	591.4	30.04	763.0	53.6	12.0	84	NE	0	0	.....	2	1	Calm	Calm	0.256	6.5	.....	Prof. P. Spina, [M.M.D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.39	721.0	30.01	762.3	78.1	25.6	85	SE	0.8	0.4	.....	2	6	S	SE	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.9 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.03	762.7	30.03	762.7	69.8	21.0	.....	SSE	.....	.....	1	.....	.....	.....	.....	0.016	0.4	.....	
Groningen	29.99	761.7	30.04	763.1	68.7	20.4	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.00	762.1	30.00	762.1	66.2	19.0	.....	NE	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.01	762.3	30.01	762.3	74.3	23.5	84	Calm	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.98	761.4	30.02	762.6	72.9	22.7	68	SE	.....	.....	2	.....	2	.....	.....	0.012	0.3	Slightly cl'dy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced sea-level. Inches.	Barometer. Reduced sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.99	761.7	30.04	763.1	62.6	17.0	70	NW	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	
Bröno	29.91	759.7	29.95	760.7	61.5	16.4	56	SW	7	3	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.85	758.1	29.99	761.7	68.9	20.5	71	SW	0	0	.....	.....	3	.....	.....	0.008	0.2	.....	
Tromsö	29.88	758.9	29.92	760.0	52.9	11.6	94	SW	4	2	.....	.....	9	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.10	764.6	30.29	769.4	67.6	19.8	89	E	4.9	2.2	.....	.....	8	.....	.....	0.236	6.0	.....	Dr. J. A. Sampaio.
Campo Major	28.98	736.1	29.97	761.3	77.0	25.0	51	ESE	11.2	5.0	.....	.....	9	.....	SSW	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	761.9	30.08	764.1	78.4	25.8	61	SW	6.9	3.1	.....	.....	7	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.60	751.8	29.95	760.7	73.6	23.1	64	SE	6.3	2.8	.....	.....	2	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.23	767.8	30.30	769.6	72.3	22.4	69	ESE	8.1	3.6	.....	.....	3	.....	.....	0.173	4.4	.....	

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

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 39′, W. 23° 20′	.....	.....	30.27	768.9	71.2	21.8	.....	E	.....	.....	2	.....	4	S	E	2	.....	D. Clouds ...	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	29.97	761.2	69.8	21	.....	WNW	.....	.....	.....	.....	5	.....	W	2	W	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.95	760.8	86.5	30.3	.....	SW	.....	.....	2	.....	3	.....	NW	3	SSW	D. Clouds ...	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.87	758.8	79.7	26.5	.....	WNW	.....	.....	1	.....	9	.....	Calm	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.78	756.3	88.7	31.5	.....	Calm	.....	.....	0	.....	0	.....	.....	0	.....	Blue sky	M T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.56	750.9	29.97	761.3	67.5	19.7	77	WNW	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.37	751.1	29.98	761.4	68.2	20.1	61	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.83	757.7	30.07	763.7	64.2	17.9	56	E	7	3	.....	.....	5k;cs	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.05	763.3	30.07	763.7	57.9	14.4	63	N	9	4	.....	.....	9ks	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.33	745.0	29.95	760.6	69.3	20.7	51	NE	4	2	.....	.....	9k;ks;c	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.91	759.8	29.98	761.6	77.0	25.0	49	NNW	4	2	.....	.....	4kn	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.97	761.1	29.98	761.6	74.5	23.6	76	NNW	7	3	.....	.....	1	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.43	747.4	29.97	761.3	53.4	11.9	75	N	13	6	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.66	753.4	29.86	758.5	68.5	20.3	48	NNW	13	6	.....	.....	8n	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	30.03	762.8	30.05	763.3	48.4	9.1	87	N	4	2	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.44	722.4	29.79	756.6	76.5	24.7	32	N	22	10	.....	.....	1c	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.86	758.5	29.78	756.4	72.9	22.7	33	W	13	6	.....	.....	8k	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Krotkowo*	29.05	737.8	29.50	749.4	55.2	12.9	90	NNW	13	6	.....	.....	10n	.....	.....	.....	.....	Heavy rain..	Cand. Fatjanow.
Kasan	29.32	744.8	29.59	751.6	56.5	13.6	81	NNW	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.64	727.4	29.56	750.7	60.4	15.8	73	Calm	0	0	.....	.....	3ck;ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.63	752.6	29.86	758.4	72.1	22.3	57	WSW	7	3	.....	.....	3ks	.....	.....	.....	.....	.....	
Tashkend	28.42	721.8	30.08	764.0	69.8	21.0	61	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.33	744.9	29.82	757.5	73.2	22.9	30	ESE	0	0	.....	.....	4	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.78	756.3	30.07	763.6	59.0	15.0	74	N	2	1	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.77	756.2	29.91	759.8	67.5	19.7	90	Calm	0	0	.....	.....	4k	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.87	758.8	29.97	761.3	82.4	28	61	SE	0.9	0.39	.....	.....	2c	.....	.....	0	0	Clear.....	Antonio Rave, Directo.
Bilbao, Met. Obs'y	30.07	763.6	30.12	765.0	67.3	19.6	86	N	1.3	0.60	.....	.....	10	.....	.....	0.047	1.2	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.7	.....	.....	67.3	19.6	83	NE	11.0	4.90	.....	.....	10	.....	.....	0	0	Covered	Domingo Martin y Perez
Madrid, Royal Observatory	27.84	707.0	29.98	761.6	74.8	23.8	54	NW	9.7	4.34	.....	0	10	.....	.....	0	0	Covered.....	The Staff.
Murcia, Met. Obs'y	29.81	757.2	29.95	760.8	87.1	30.6	47	E	4.3	1.94	.....	2	6	WSW	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.15	740.4	30.02	762.6	65.7	18.7	77	NE	22.4	10.00	.....	.....	10	.....	.....	0	0	Covered.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.71	754.7	29.78	756.4	79.5	26.4	88	SW	2.2	1.0	.....	7cs	6k;kn	N	W	0.457	11.6	Cloudy.....	Benito Vines, S. J
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.89	759.2	29.99	761.6	75.0	23.9	76	SW	12.7	5.7	.....	0	10	.....	W	0.050	1.3	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.6	30.00	761.9	82.0	27.8	89	SE	0	0	.....	7cs	3k	SE	SE	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	25.97	761.2	30.01	762.2	55.8	13.2	.....	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.99	761.7	30.04	763.0	63.7	17.6	74	SW	.....	.....	2	.....	7	.....	.....	0	0	.....	
Hernosand	29.96	761.0	30.01	762.3	61.2	16.2	87	Calm	.....	.....	0	.....	9	.....	.....	0.177	4.5	.....	
Stockholm	29.83	757.6	30.00	762.1	59.5	15.3	93	E	.....	.....	4	.....	10	.....	.....	0.346	8.8	.....	
Wisby	29.87	758.8	29.93	760.3	65.1	18.4	80	ENE	.....	.....	6	.....	10	.....	.....	0.008	0.2	.....	
Sub-Series.																			
Upsala	29.92	760.0	30.00	761.9	64.8	18.2	80	SSE	5.8	2.6	.....	.....	7	.....	ENE	0.152	3.85	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.60	726.4	29.97	761.2	74.1	23.4	65	NNE	.....	.....	2	.....	2	.....	.....	0	0	Clear	The Observatory.
Zurich	28.39	721.2	29.96	761.0	75.9	24.4	66	NW	.....	.....	2	.....	1	.....	.....	0.114	2.9	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.9 mm.; Thermometer, +4.1 cent.; Relative Humidity, +4 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.00	762.1	74.1	23.4	52	ENE	19	8.5	.....	.....	4	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.02	762.6	92.3	33.5	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.62	752.3	29.73	755.1	92.5	33.6	62	SW	.....	.....	3	.....	1ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

CANADIAN SERIES.

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

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.98	761.5	30.28	769.1	64	17.8	.....	S	5	2.2	.....	.....	8s	.....	SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.38	771.6	30.44	773.2	50	10.0	89	SW	6	2.7	.....	5c	0	SW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.42	772.7	30.47	773.9	54	12.2	80	SW	6	2.7	.....	5c	0	Calm	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.09	764.3	30.28	769.1	65.4	18.6	85	SW	.....	.....	1	3ck	0	W	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.17	766.3	30.34	770.6	54	12.2	83	NW	.....	.....	2	.....	.....	.....	.....	0	0	Fine	H. A. Johnson.
Esquimault, B. C	30.29	769.4	30.34	770.6	45.3	7.4	100	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.22	767.6	30.24	768.1	59	15.0	73	SW	15	6.7	.....	2k	5ks	W	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.43	772.9	30.49	774.4	47.8	8.8	89	SE	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	Prof. Harrison.
*Fort Garry Manitoba	29.05	737.9	29.86	758.4	50	10.0	98	S	4	1.8	.....	5k	5n	W	W	0	0	Cloudy	James Stewart.
Granton, Ontario	29.11	739.4	30.17	766.3	68	20.0	100	S	.....	.....	2	1ks	0	N	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.33	770.4	30.46	773.7	53	11.7	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.87	758.7	30.23	767.8	71.0	21.7	79	SW	.....	.....	3	10ck	0	SW	.....	0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	30.37	771.4	30.40	772.1	51	10.6	63	SW	.....	.....	1	2k	2k	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.97	761.2	30.30	769.6	68	20.0	87	S	21	9.4	.....	5c	2ks	Calm	S	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.44	773.2	30.48	774.2	61.8	16.6	62	W	8	3.6	.....	5c	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.11	764.8	30.30	769.6	64	17.8	84	S	8	3.6	.....	5ck	2ks	W	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.49	749.0	30.16	766.1	70	21.1	90	S	8	3.6	.....	2cs	0	SW	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.95?	760.7?	30.23	767.8	72.2	22.3	83	SW	.....	.....	1	6ck	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.55	750.6	30.22	767.6	71	21.7	85	S	12	5.4	.....	5k	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.58	751.3	30.20	767.1	71	21.7	79	E	14	6.3	.....	2ck	0	S	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	30.03	762.7	30.35	770.9	59	15.0	85	Calm	.....	.....	0	.....	10n	.....	Calm	0.05	1.3	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.74	755.4	30.18	766.6	66	18.9	94	E	6	2.7	.....	.....	8s	.....	SE	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.42	772.7	30.47	773.9	52	11.1	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	30.33	770.4	30.49	774.4	55	12.8	84	S	8	3.6	.....	4c	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.43	747.5	30.12	765.0	71	21.7	84	S	16	7.2	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.93	734.8	30.17	766.3	67.4	19.7	89	S	10	4.5	.....	2ck;cs	1ks	.....	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	30.47	773.9	30.50	774.7	59	15.0	75	SW	5	2.2	.....	8c	2ks	.....	SW	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.86	758.4	30.23	767.8	72	22.2	84	S	7	3.1	.....	8ck	2ks	S	S	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	55.0	12.8	68	W	.....	.....	.....	2c	2s	.....	.....	0	0	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0 10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.18	766.6	30.41	772.4	60	15.6	65	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.44	747.8	30.06	763.5	70	21.1	84	Calm	0	0	.....	10cs	0	Calm	.....	0	0	Cloudy	
Atlantic City, New Jersey	30.31	769.9	30.33	770.4	67	19.4	84	NE	26	11.6	.....	.....	10s	.....	NE	Inap.	Inap.	Threatening	
Augusta, Georgia	29.95	760.7	30.13	765.3	73	22.8	85	E	8	3.6	.....	8k	0	E	.....	Inap.	Inap.	Fair	
Baltimore, Maryland	30.32	770.1	30.36	771.1	65	18.3	78	E	6	2.7	.....	.....	10s	.....	NE	0.07	1.8	Threatening	
Barnegat, New Jersey	30.33	770.4	30.35	770.9	65	18.3	78	E	24	10.7	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
Bismarck, Dakota	28.16	715.3	30.02	762.5	51	10.6	93	NE	25	11.2	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Boerne, Texas	28.52	724.4	.....	.....	74	23.3	95	SE	6	2.7	.....	.....	10n	.....	Calm	0.51	13.0	Light rain	
Boise City, Idaho	27.44	697.0	29.40	772.1	40	4.4	56	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.30	769.6	30.45	773.4	62	16.7	72	E	8	3.6	.....	5cs;1k	Haze	Calm;SE	Calm	0.19	4.8	Fair	
Brackettville, Texas	28.80	731.5	29.79	756.7	75	23.9	90	S	9	4.0	.....	.....	10s	.....	S	0.94	23.9	Cloudy	
Breckenridge, Minnesota	28.82	732.0	29.77	756.1	62	16.7	97	SE	16	7.2	.....	0	2ks	.....	SW	0.06	1.5	Clearing	
Brownsville, Texas	29.88	758.9	29.95	760.7	81	27.2	87	SE	.....	.....	1	2k	0	Calm	.....	0	0	Fair	
Buffalo, New York	29.55	750.6	30.23	767.8	70	21.1	66	S	8	3.6	.....	2k	2s	SW	SW	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	80	26.7	55	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.13	765.3	30.39	771.9	63	17.2	72	S	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.64	752.8	30.02	762.5	77	25.0	77	S	4	1.8	.....	8ck	0	S	.....	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	56	13.3	62	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	63	17.2	57	Calm	.....	.....	0	0	1s	.....	Calm	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.24	768.1	61	16.1	71	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.38	695.4	29.95	760.7	40	4.4	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.12	765.0	30.12	765.0	77	25.0	86	NE	25	11.2	.....	2cs	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.18	766.6	30.20	767.1	73	22.8	90	NE	28	12.5	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	76	24.4	91	NE	24	10.7	.....	5k	0	E	.....	0	0	Fair	
Cape May, New Jersey	30.28	769.1	30.31	769.9	68	20.0	84	NE	18	8.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Castroville, Texas	29.16	740.7	29.84	757.9	76	24.4	95	SE	4	1.8	.....	.....	10s	.....	SE	0.86	21.8	Cloudy	
Charleston, South Carolina	30.06	763.5	30.12	765.0	76	24.4	86	NE	16	7.2	.....	0	2ks	.....	E	Inap.	Inap.	Fair	
Cheyenne, Wyoming	24.07	611.4	30.01	762.2	43	6.1	92	N	20	8.9	.....	.....	10s	.....	Calm	0	0	Threatening	
Chicago, Illinois	29.34	745.2	30.00	762.6	72	22.2	76	SW	5	2.2	.....	10ck	0	SW	.....	0	0	Cloudy	
Cincinnati, Ohio	29.47	748.5	30.09	764.3	75	23.9	72	SE	5	2.2	.....	4k	5ks	SE	SE	0	0	Cloudy	
Cleveland, Ohio	29.47	748.5	30.17	766.3	69	20.6	70	SE	16	7.2	.....	5c	0	W	.....	0	0	Fair	
Coleman City, Texas	28.18	715.8	29.79	756.7	69	20.6	100	W	1	0.4	.....	.....	10n	.....	Calm	1.30	33.0	Heavy rain	
Columbus, Ohio	29.34	745.2	30.14	765.5	76	24 4	64	SE	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Concho, Texas	28.04	712.2	29.65	753.1	69	20.6	94	SE	4	1.8	.....	0	10s	.....	SE	2.10	53.3	Cloudy	
Corsicana, Texas	29.49	749.0	29.94	760.5	74	23.3	90	S	3	1.3	.....	2cs	8s	Calm	S	0	0	Cloudy	
Davenport, Iowa	29.38	746.2	30.00	762.0	70	21.1	75	Calm	0	0	.....	1cs	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.81	731.8	29.93	760.2	74	23.3	81	NW	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Threatening	
Denison, Texas	29.16	740.7	29.92	760.0	74	23.3	100	SE	2	0.9	.....	.....	10s	.....	SE	0.30	7.6	Cloudy	
Denver, Colorado	24.81	630.2	30.03	762.7	52	11.1	66	N	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Des Moines, Iowa	29.07	738.4	29.90	759.4	74	23.3	76	NE	1	0.4	.....	2c	5s	NW	NE	0	0	Cloudy	
Detroit, Michigan	29.47	748.5	30.11	764.8	72	22.2	80	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Dodge City, Kansas	27.34	694.4	29.54	750.3	64	17.8	89	S	2	0.9	.....	0	0	.....	.....	0.10	2.5	Clear	
Dubuque, Iowa	29.29	744.0	29.96	761.0	71	21.7	85	S	1	0.4	.....	5k	5ks	S	Calm	0.03	0.8	Cloudy	
Duluth, Minnesota	29.32	744.7	29.98	761.5	61	16.1	94	NE	8	3.6	.....	.....	10s	.....	NE	0.05	1.3	Cloudy	
Eagle Pass, Texas	29.17	740.9	29.88	758.9	76	24.4	91	Calm	0	0	.....	.....	10s	.....	S	1.29	32.8	Cloudy	
Eastport, Maine	30.40	772.1	30.47	773.9	59	15.0	70	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	79	26.1	87	S	.....	.....	1	.....	5s	.....	S	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	73	22.8	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.50	749.3	30.20	767.1	69	20.6	80	S	16	7.2	.....	10ck	0	S	.....	0	0	Cloudy	
Escanaba, Michigan	29.38	746.2	30.02	762.5	65	18.3	84	W	2	0.9	.....	5c	0	W	.....	0.02	0.5	Fair	
Florence, Arizona	28.39	721.1	29.99	761.7	72	22.2	67	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.51	647.9	29.57	751.1	61	16.1	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	64	17.8	78	Calm	0	0	.....	5k	0	SW	.....	0.13	3.3	Fair	
Fort Gibson, Indian Ter	29.43	747.5	29.94	760.5	72	22.2	90	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Fort Griffin, Texas	28.68	728.5	29.90	759.4	71	21.7	95	Calm	0	0	.....	.....	10n	.....	Calm	1.44	36.6	Heavy rain	
Fort McKavett, Texas	27.74	704.6	29.58	751.3	72	22.2	95	S	10	4.5	.....	.....	10s	.....	S	0.50	12.7	Threatening	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.75	730.2	29.80	756.9	74	23.3	85	SE	8	3.6	.....	.....	10s	.....	SW	0.11	2.8	Cloudy	
Fredericksburg, Texas	28.20	716.3	29.70	754.4	73	22.8	95	S	1	0.4	.....	.....	10ks	.....	Calm	0.20	5.1	Cloudy	
Galveston, Texas	29.91	759.7	29.95	760.7	80	26.7	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.41	747.0	30.04	763.0	67	19.4	79	Calm	0	0	.....	5ck	0	W	.....	0	0	Fair	
Indianapolis, Indiana	29.33	745.0	30.07	763.8	73	22.8	81	SE	3	1.3	.....	2k	0	Calm	.....	0	0	Clear	
Indianola, Texas	29.93	760.2	29.96	761.0	82	27.8	83	S	6	2.7	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.84	732.5	29.92	760.0	74	23.3	81	S	3	1.3	.....	.....	10s	.....	S	0.31	7.9	Cloudy	
Jacksonville, Florida	29.90	759.4	29.93	760.2	82	27.8	79	NE	14	6.3	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Keokuk, Iowa	29.36	745.7	29.95	760.7	72	22.2	71	S	3	1.3	.....	1ck	2s	Calm	Calm	0	0	Fair	
Key West, Florida	29.60	751.8	29.63	752.6	80	26.7	91	W	34	15.2	.....	.....	10n	.....	W	1.19	30.2	Threatening	
Kittyhawk, North Carolina	30.12	765.0	30.15	765.8	76	24.4	91	NE	26	11.6	.....	0	8s	.....	NE	0.05	1.3	Fair	
Knoxville, Tennessee	29.18	741.2	30.15	765.8	70	21.1	70	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.24	742.7	29.94	760.5	72	22.2	76	S	1	0.4	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	62	16.7	88	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	
Laredo, Texas	29.47	748.5	29.79	756.7	78	25.6	91	SE	3	1.3	.....	2k	0	Calm	.....	0	0	Clear	
Lead City, Dakota	24.92	633.0	30.20	767.1	37	2.8	91	NW	8	3.6	.....	.....	10n	.....	Calm	0.22	5.6	Light rain	
Leavenworth, Kansas	29.07	738.4	29.88	758.9	70	21.1	90	S	7	3.1	.....	5ck	2s	S	S	0.01	0.3	Cloudy	
Los Angeles, California	29.57	751.1	29.90	759.4	62	16.7	88	NE	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.56	750.8	30.10	764.5	74	23.3	76	SE	1	0.4	.....	2ck	Sm'e	SE	Calm	Inap.	Inap.	Smoky	
Lynchburg, Virginia	29.64	752.8	30.31	769.9	71	21.7	75	NE	6	2.7	.....	0	5ks	.....	Calm	0	0	Fair	
Marquette, Michigan	29.32	744.7	30.00	762.0	64	17.8	94	NW	4	1.8	.....	.....	10s	.....	Calm	0.70	17.8	Cloudy	
Mason, Texas	28.28	718.3	29.96	761.0	73	22.8	95	SE	7	3.1	.....	.....	10s	.....	SE	0.33	8.4	Cloudy	
Memphis, Tennessee	29.74	755.4	30.05	763.3	75	23.9	72	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Milwaukee, Wisconsin	29.32	744.7	30.02	762.5	69	20.6	80	SW	4	1.8	.....	5ck	0	Calm	.....	0	0	Fair	
Mobile, Alabama	29.96	761.0	30.01	762.2	76	24 4	86	E	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Montgomery, Alabama	29.82	757.4	30.05	763.3	75	23.9	76	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.21	741.9	30.24	768.1	71	21.7	75	SE	11	4.9	.....	1c	0	NE	.....	0	0	Clear	
Mt. Washington, N. H.	24.22	615.2	30.58	776.7	50	10.0	86	NW	4	1.8	.....	2s	5s	Calm	NW	0	0	Fair	
Nashville, Tennessee	29.60	751.8	30.12	765.0	76	24.4	73	Calm	0	0	.....	.....	10s	.....	NE	0.10	2.5	Cloudy	
New Haven, Connecticut	30.31	769.9	30.42	772.7	59	15.0	82	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.39	771.9	30.44	773.2	62	16.7	72	N	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New Orleans, Louisiana	29.90	759.4	29.96	761.0	82	27.8	79	NE	7	3.1	.....	1k;hz	0	E;Calm	.....	0	0	Clear	
Newport, Rhode Island	30.37	771.4	30.42	772.7	61	16.1	71	NE	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
New York, New York	30.24	768.1	30.42	772.7	60	15.6	76	NE	15	6.7	.....	1k	5ks	NE	NE	0	0	Fair	
Norfolk, Virginia	30.17	766.3	30.23	767.8	73	22.8	85	NE	14	6.3	.....	.....	10s	.....	NE	0.12	3.0	Cloudy	
North Platte, Nebraska	27.03	686.6	29.51	749.5	60	15.6	91	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.29	769.4	30.33	770.4	38	3.3	100	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.81	731.8	29.84	757.9	68	20.0	90	Calm	0	0	.....	.....	10s	.....	SE	0	0	Cloudy	
Oswego, New York	30.00	762.0	30.32	770.1	68	20.0	74	S	8	3.6	.....	8ck	0	W	.....	0	0	Fair	
Pembina, Dakota	29.02	737.1	29.84	757.9	50	10.0	100	SE	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Philadelphia, Pa	30.35	770.9	30.40	772.1	61	16.1	77	NE	16	7.2	.....	10k	0	NE	.....	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.69	728.7	.....	.....	76	24.4	45	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	30	— 1.1	78	SW	26	11.6	.....	0	Haze	.....	.....	0.02	0.5	Hazy	
Pioche, Nevada	24.17	613.9	29.94	760.5	47	8.3	21	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.46	748.3	30.25	768.3	67	19.4	79	SE	1	0.4	.....	1c	0	Calm	.....	0	0	Clear	
Port Huron, Michigan	29.48	748.8	30.11	764.8	72	22.2	76	S	12	5.4	.....	8ck	2ks	SW	Calm	0	0	Cloudy	
Portland, Maine	30.41	772.4	30.46	773.7	56	13.3	81	NE	2	0.9	.....	1k	0	Calm	.....	0	0	Clear	
Portland, Oregon	30.26	768.6	30.37	771.4	50	10.0	86	NW	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Prescott, Arizona	24.81	630.2	30.17	766.3	52	11.1	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.17	740.9	29.96	761.0	76	24.4	95	Calm	0	0	.....	8ck	0	S	.....	Inap.	Inap.	Cloudy	
Punta Rassa, Florida	29.21	741.9	29.22	742.2	74	23.3	100	NW	.....	.....	.....	.....	10n	.....	NW	0.48	12.2	Light rain	
Red Bluff, California	29.65	753.1	30.00	762.0	71	21.7	18	N	20	8.9	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.95	760.7	80	26.7	78	SE	6	2.7	.....	5cs	0	Calm	.....	Inap.	Inap.	Fair	
Rochester, New York	29.65	753.1	30.24	768.1	69	20.6	70	SW	6	2.7	.....	1k	0	W	.....	0	0	Clear	
Roseburg, Oregon	29.68	753.9	30.27	768.8	41.5	5.3	82	Calm	0	0	.....	1c	Haze	Calm	Calm	0	0	Fair	
Sacramento, California	29.78	756.4	29.86	758.4	70	21.1	21	N	24	10.7	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.03	762.7	74	23.3	72	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	29.92	760.0	29.94	760.5	78	25.6	82	N	12	5.4	.....	2ck	0	NE	.....	0.04	1.0	Fair	
St. Paul, Minnesota	29.10	739.1	29.90	759.4	62	16.7	94	SE	3	1.3	.....	.....	Fog	.....	.....	Inap.	Inap.	Foggy	
Salt Lake City, Utah	25.82	655.8	30.15	765.8	48.0	8.9	43	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.25	742.9	29.81	757.2	76	24.4	91	E	1	0.4	.....	0	8s	.....	SE	0.27	6.9	Cloudy	
San Diego, California	29.86	758.4	29.93	760.2	63	17.2	94	SW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.48	748.8	30.12	765.0	72	22.2	71	S	15	6.7	.....	2ck	1ks	NW	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.35	770.9	30.38	771.6	63	17.2	78	E	27	12.1	.....	5k	0	E	.....	0	0	Fair	
San Francisco, California	29.79	756.7	29.86	758.4	57	13.9	81	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	48	8.9	56	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.97	761.2	30.06	763.5	76	24.4	91	NE	14	6.3	.....	.....	10ks	.....	NE	0.10	2.5	Threatening	
Shreveport, Louisiana	29.78	756.4	29.99	761.7	75	23.9	95	N	2	0.9	.....	Haze	Fog	.....	Calm	0	0	Fair	
Silver City, New Mexico	24.30	617.2	.....	.....	55	12.8	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.12	765.0	30.16	766.1	74	23.3	90	NE	12	5.4	.....	0	8s	.....	NE	0	0	Cloudy	
Springfield, Massachusetts	30.01	762.2	30.44	773.2	61	16.1	71	E	4	1.8	.....	2k	0	E	.....	0	0	Fair	
Stockton, Texas	26.92	683.8	29.92	760.0	65	18.3	63	SW	4	1.8	.....	.....	Fog	.....	.....	0	0	Dense fog	
Thatcher's Island, Mass	30.42	772.7	30.48	774.2	61	16.1	77	E	4	1.8	.....	1k	0	E	.....	0.02	0.5	Clear	
Toledo, Ohio	29.44	747.8	30.09	764.3	74	23.3	72	SW	8	3.6	.....	0	2ks	.....	Calm	0	0	Clear	
Tucson, Arizona	27.17	690.1	29.72	754.9	71	21.7	63	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.02	762.5	30.05	763.3	78	25.6	91	E	30	13.4	.....	.....	10s	.....	E	0.65	16.5	Threatening	
Umatilla, Oregon	30.04	763.0	.....	.....	43	6.1	67	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	92	S	.....	.....	1	.....	10s	.....	S	0.13	3.3	Cloudy	
Uvalde, Texas	29.03	737.3	29.82	757.4	75	23.9	90	S	2	0.9	.....	.....	10s	.....	S	0.70	17.8	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.00	762.0	74	23.3	90	E	4	1.8	.....	0	0	.....	.....	6	0	Clear	
Virginia City, Montana	24.52	622.8	30.00	762.0	37	2.8	81	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Visalia, California	29.52	749.8	29.88	758.9	58	14.4	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.23	767.8	30.34	770.6	65	18.3	89	NE	16	7.2	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	61	16.1	82	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.07	763.8	30.14	765.5	72	22.2	90	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Winnemucca, Nevada	25.89	657.6	30.25	768.3	38	3.3	38	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.37	771.4	30.43	772.9	62	16.7	77	E	5	2.2	.....	.....	8ks	.....	SE	Inap.	Inap.	Cloudy	
Yankton, Dakota	28.64	727.4	29.89	759.2	60	15.6	91	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.60	751.8	29.75	755.6	73	22.8	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.87	758.7	29.92	760.0	42.0	5.6	96	NE	14	6.3	.....	4k	5s	NE	NE	1.00	25.4	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.78	756.4	29.80	756.9	81	27.2	87	SW	4.8	2.1	.....	8c	4ks	Calm	SW	0.22	5.6	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.88	758.9	29.91	759.7	81	27.2	87	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	83	E	3	1.3	.....	8c	2ks	NE	.....	2.31	58.7	Clearing	G. O. Gellich.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	82	27.8	91	Calm	0	0	.....	5c	2n	SE	.....	0.21	5.3	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	83	28.3	.....	E	15	6.7	.....	.....	.....	.....	.....	0	0	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	83	28.3	79	SE	.....	.....	2	4ck	4s	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.25	641.3	.....	.....	68.5	20.3	78	Calm	0	0	.....	1cs	2ks	.....	.....	0	0	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Prackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m. Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622(?) ft., or 1408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft.,or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 m.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.12	765.0	78	25.6	78	25.6	91	NE	16	7.2	.....	.....	10	.....	NE	0	0	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	30.45‡	773.4‡	.....	.....	61	16.1	94	SE	2	0.9	.....	.....	2	.....	....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.04*	763.0*	73.9	23.3	72	22.2	80	NE	.....	.....	4	.....	10ks	.....	NE	0	0	.....	.....	Misty....	
Adams. S. 33° 17', W. 168° 17'	30.56	776.2	63	17.2	56	13.3	94	NE	.....	.....	3–4	.....	10	.....	NE	0	0	Long	SE	Cloudy	
Alliance, Villafranca, France	29.94‡	760.5‡	.....	.....	80	26.7	63	S	.....	.....	0–1	.....	0	.....	.....	.....	.....	None	.....	Hazy.....	
Ashuelot. Yokohama, Japan	30.12	765.0	74	23.3	73	22.8	81	N	.....	.....	3	.....	10	.....	N	.....	.....	Mod'ate	NNE	Cloudy.....	
Alaska, S. 51° 10', W. 74° 09'	29.42	747.3	62	16.7	44	6.7	76	WNW	.....	.....	2	.....	10	.....	SE	0.22	5.6	Smooth	.....	Raining.....	
Canonicus, New Orleans, La	30.00	762 0	58	14.4	82	27.8	91	N	.....	.....	4	.....	5	.....	.....	.....	.....	.....	.....	Fair.....	
Colorado. New York, N. Y.	30.40‡	772.1‡	.....	.....	62	16.7	77	NE	9	4.0	.....	.....	8	.....	E	0	0	.....	.....	Hazy.....	
Constitution. Havre, France	30.02‡	762.5‡	.....	.....	69	20.6	95	WNW	.....	.....	1	.....	4	.....	Calm	.....	.....	.....	.....	Clear	
Despatch. Constantinople, Turkey	30.00‡	762.0‡	.....	.....	74	23 3	59	NE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.32	770.1	76	24.4	74	23.3	100	NE	8.4	3.8	.....	.....	8	.....	NE	0.08	2.0	.....	.....	Cloudy.....	
Gettysburg Villafranca, France	29.88	758.9‡	.....	.....	89	31.7	84	S	.....	.....	1	.....	0	.....	.....	0	0	.. ..	.....	Clear.....	
Guard, Bahia, Brazil	30.21	767.3	77	25.0	76	24.4	77	SSE	.....	.....	3	.....	2	.....	SSE	.....	.....	.....	.....	Clear.....	
Hartford. Rio de Janeiro, Brazil	30.35	770.9	.....	... .	62	16.7	94	Calm	0	0	.....	.....	10	.....	.....	0.08	2.0	.....	.....	Rainy.....	
Marion, Leghorn, Italy	30.07	763.8	76	24.4	76	24.4	77	N	.....	.....	3	.....	8	.....	Calm	0	0	.....	.....	Fair	
Michigan, Erie, Pa.	29.71	754.6	71	21.7	68.5	20.3	77	SE	.....	.....	6	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
Monocacy. Ura-no-go-ura, Japan	30.08‡	764.0‡	.....	.....	74	23.3	86	N	.....	.....	3–4	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.	30.25†	768.3†	.....	.....	77	25.0	91	NE	18	8.0	.....	.....	8	.....	N	0	0	.....	.....	Threatening	
Onward, Callao, Peru	30.14†	765.5†	.....	....	62	16.7	88	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.	30.44	773.2	68	20.0	67	19.4	100	NE	.....	.....	3	.....	1	.....	SSW	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China	29.96	761.0	70	21.1	69	20.6	85	WNW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Plymouth. New York, N. Y.	30.44	773.2	62	16.7	62	16.7	83	NE	.....	.....	4	.....	7	.....	NE	.....	.....	.....	.....	Fair	
Ranger. Hong-Kong, China	29.95	760.7	86	30.0	86	30.0	87	S	.....	.....	1	.....	8	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas	29.90	759.4	80	26.7	80	26.7	100	SE	.....	.....	2	.....	5	....	Calm	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md.	30.28‡	769.1‡	.....	.....	65	18.3	84	ENE	.....	.....	4	.....	10	.. ..	NE	0	0	.....	.....	Cloudy.....	
Saratoga, New York, N. Y.	30.45*	773.4*	.....	.....	63	17.2	94	NE	.....	.....	6	.....	5	.....	N	0	0	.....	.....	Clear?.....	
St. Louis, League Island, Pa	30.27	768.8	66	18.9	64	17.8	83	NE	15	6.7	.....	.....	10	.....	NNE	0	0	.....	.....	Cloudy	
Supply, Havre, France	30.12	765.0	70	21.1	70	21.1	75	NW	.....	.....	0–1	.....	2	.....	NW	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.	30.44‡	773.2‡	.....	.....	61	16.1	88	NE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	30.03‡	762.7‡	.....	.....	67	19.4	89	W	.....	.....	1–2	.....	5	.....	W	1.5	38.	.....	.....	Showery.....	
Tuscarora, La Paz, Mexico	29.70	754 4	78	25.6	80	26.7	82	SSE	.....	.....	0–1	.....	5	....	Calm	0	0	.....	.....	Fair.....	
Vandalia. Villafranca, France	29.95‡	760 7‡	.....	.....	80	26.7	66	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.	30.46‡	773.7‡	.....	.. ..	59	15.0	76	NE	6	2.7	.....	.....	5	.....	Calm	0.01	0.3	.....	.....	Fair.....	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co operation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Esquimault, B. C.		30.47*	773.9*				Calm			0		Sm'e						Fair	Capt. Cobb.
S. S. City of Peking, N. 36° 35′, E. 172° 40′		30.07†	763.8†	74	23.3	95	N	10	4.5			8		NW	Light	Small	NW	Showery	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 21° 19′ W. 107° 42′		29.92†	760.0†	83	28.3	91	NE			1–2		7		SE	0	Heavy	S	D. clouds	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, San Francisco, Cal.		29.85†	758.2†	66	13.3	81	W			1		2		E	0			D. clouds	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.67*	753.6*	86	30.0	83	Var.			4		ks		SW				Drizzling	Capt. L. Myer.
S. S. Gaelic, Yokohama, Japan		29.87†	758.7†	84	28.9	79	S			4		n		N	Heavy				Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 38° 8′, W. 69° 52′		30.11	764.8	75.5	24.2	72	ENE			6		5		ENE	3 hours	4–5	ENE	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall of melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.40*	772.1*	62	16.7	??	ENE			3		10		ENE	Light			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		30.08	764.0	65	18.3	89	WNW			1		10		Calm				Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 09', W. 61° 14'		30.38*	771.6*				NNE	20	8.9			8		NW		Mod'ate	NNE	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 34° 50', W. 71° 35'		30.02	762.5	82	27.8	75	ENE	8	3.6			2k			0	Swell	NE	D. clouds	Capt. James Jorgensen.
Schooner Florence, Niantic		29.88*	758.9*	42.0	5.6		NW			3.5		10ks			0			Fair	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 9, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.06	763.5	70.0	21.1	87	NE	.....	.....	5	.....	3	.....	.....	0	0	Pretty fair..	Dr. Ollive.
Nemours	.....	.....	29.96	761.0	80.6	27.0	69	WSW	.....	.....	3	.....	1	.....	.....	0	0	Very fair.....	Kesxuche.
Algiers	.....	.....	29.95	760.7	81.7	27.6	75	ENE	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	Tourillere.
La Calle	.....	.....	29.99	761.8	80.6	27.0	82	NW	.....	.....	5	.....	4	.....	.....	0	0	Cloudy.....	Foufrede.
Tunis	.....	.....	29.96	760.9	77.5	25.3	74	WNW	.....	.....	5	.....	0	.....	.....	0	0	Clear.....	Jacques.
Sfax	.....	.....	30.03	762.7	89.6	32.0	.....	W	.....	.....	5	.....	2	.....	.....	0	0	Fair.....	Gau.
Saida	.....	.....	29.99	761.7	80.6	27.0	43	E	.....	.....	1	.....	4	.....	.....	0	0	Cloudy.....	Herbin.
Tebessa	.....	.....	29.99	761.7	77.0	25.0	28	NNE	.....	.....	8	.....	3	.....	.....	0	0	Pretty fair..	Watrin.
Geriville	.....	.....	29.98	761.6	86.0	30.0	36	NNW	.....	.....	9	.....	8	.....	.....	0	0	Very cloudy	Brugniaux.
Laghouat	.....	.....	30.08	764.1	91.0	32.8	21	SW	.....	.....	7	.....	0	.....	.....	0	0	Clear.....	Bertrand.
Biskra	.....	.....	30.02	762.5	94.3	34.6	29	NW	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

AUSTRIAN SERIES.

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

Agram	29.35	745.6	29.87	758.8	81.3	27.4	58	NE	.....	.....	3	.....	4	.....	.....	0	0	.....	Prof. Ivan Stozu.
Cracow, I. R. Observatory	29.19	741.3	29.92	760.0	73.0	22.8	66	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.05	737.8	29.80	756.2	74.1	23.4	65	NE	.....	.....	1	.....	1cs	.....	.....	0.16	4.	.....	Julius Mikolik.
Gratz	28.68	728.4	29.87	758.8	74.5	23.6	68	ESE	.....	.....	2	.....	2	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.49	723.6	29.90	759.4	77.4	25.2	57	NE	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.57	725.6	29.85	758.2	71.2	21.8	75	W	.....	.....	2	.....	10	.....	.....	1.575	40.0	.....	Prof. C. Wagner
Lemberg	28.91	734.3	29.87	758.6	67.1	19.5	75	NE	.....	.....	3	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.77	756.1	29.87	758.8	82.0	27.8	58	WSW	.....	.....	1	.....	7cs	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.45	748.1	29.89	759.2	83.7	28.7	43	NW	.....	.....	2	.....	5	.....	.....	0	0	.....	Julius Osics, S. J.
Szegedin	29.60	751.7	29.86	758.4	81.3	27.4	68	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.80	756.9	29.90	759.5	79.9	26.6	64	NW	.....	.....	1	.....	1	.....	.....	0.165	4.2	Raining.....	P. Busin.
Vienna	29.18	741.1	29.85	758.3	80.1	26.7	57	S	.....	.....	1	.....	3	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Aberdeen	29.78	756.4	29.88	758.9	59.9	15.5	.....	WNW	22	9.8	.....	.....	2	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	29.91	759.7	29.93	760.2	62	16.7	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	George Carrick.
Armagh, Observatory	.....	.....	30.04	763.0	60.0	15.6	.....	WNW	6	2.7	.....	.....	6	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.00	762.0	60.5	15.8	.....	W	14	6.3	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.57	751.1	29.96	761.0	65.6	18.7	.....	W	.....	.....	5	.....	2	.....	.....	0	0	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.82	757.4	29.85	1758.2	83	28.3	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.04	763.0	66.0	18.9	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H.C.
Cardington	.....	.....	30.04	763.0	69.0	20.6	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.93	760.2	30.06	763.5	66.2	19.0	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.71	729.2	30.15	765.8	64.0	17.8	.....	W	.....	.....	2	.....	2	.....	.....	.....	.....	Fine	Alexander Watt.
Donaghadee	29.99	761.7	30.02	762.5	65	18.3	.....	NNW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.03	762.7	30.06	763.5	66	18.9	.....	WSW	.....	.....	2	.....	7	.....	.....	.....	.....	Hazy	J. Costello.
Eccles, (near Manchester)	.....	.....	29.98	761.5	62.8	17.1	.....	W	4.0	1.8	.....	.....	10	.....	.....	.....	.....	Overcast.....	Thomas Mackereth.
Falmouth, Observatory	29.94	760.5	30.16	766.1	67.4	19.7	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.69	703.3	30.00	762.0	74.6	23.7	.....	NE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G.Salmon, A.H. C.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	75.5	25.3	.....	SW	.....	.....	0	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	30.09	764.3	63	17.2	.....	N	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.96	761.0	.....	.....	.....	NE	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.72	754.9	29.92	760.0	61.7	16.5	.....	W	.....	.....	5	.....	2	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	30.01	762.2	30.01	762.2	66	18.9	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.89	759 2	30.06	763.5	65.0	18.3	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	29.92	760.0	30.14	765.5	65.5	18.6	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.17	766.3	67	19.4	.....	W	.....	.....	2	.....	3ck	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	29.99	761.7	30.05	763.3	61	16.1	.....	N	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.90	759.4	30.19	766.8	65.2	18.4	.....	WNW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	J. Fisher.
Kew, Observatory	30.03	762.7	30.06	763.5	66.9	19.4	.....	W	10	4.5	.....	.....	9	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	30.02	762.5	30.05	763.3	64	17.8	.....	NW	.....	.....	5	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.01	762.2	65.6	18.7	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.75	755.6	29.82	757.4	79.6	26.4	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Sergt. Beckett.
Nairn	29.81	757.2	29.88	758.9	60	15.6	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	¾ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.82	757.4	82.5	28.1	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	29.83	757.7	30.01	762.2	70.0	21.1	.....	SW	.....	.....	3	.....	10k	.....	WSW	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.50	749.3	30.01	762.2	64.0	17.8	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.04	763.0	66	18.9	.....	W	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds.....	H.E. Bellamy.
Plymouth	30.04	763.0	30.12	765.0	68.4	20.2	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	30.04	763.0	30.08	764.0	66	18.9	.....	WNW	.....	.....	3	.....	8	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	29.90	759.4	30.07	763.5	63	17.2	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.83	757.7.	56.5	13.6	.....	W	24	10.7	.....	.....	0	.....	.....	.....	.....	Blue sky.....	Rev.C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.83	757.7	77.0	25.0	.....	NE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.73	755.1	30.01	762.2	64.6	18.1	.....	SW	.....	.....	3	.....	6	.....	.....	0	0	D. clouds.....	W. F. Cooper.
Silloth Rectory	29.92	760.0	29.95	760.7	65.6	18.7	72	SW	.....	.....	1	.....	4	.....	.....	0.040	1.02	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.59	751.6	30.00	762.0	59.7	15.4	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	29.86	758.4	30.07	763.8	66.6	19.2	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	Rev.C.H.Griffith, F.M.S
Thurso	.....	.....	29.82	757.4	59	15.0	.....	WNW	.....	.....	4	.....	3	.....	.....	.....	.....	Blue sky.....	John Trotter.
Truro, Royal Institution	.....	.....	30.12	765.0	70	21.1	.....	W	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.12	765.0	63.6	17.6	.....	NNW	14	6.3	.....	.....	5	.....	.....	.....	.....	D. clouds.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.73	755.1	62.5	16.9	78	N	.....	.....	1	.....	10k	.....	.....	0	0	Cloudy.....	FrancisAbbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.13	765.4	71.3	21.8	62	E	14.5	6.5	.....	0	6	.....	ESE	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.75	755.6	29.84	757.9	63.0	17.2	73	N	15	6.7	.....	.....	10	.....	.....	0	0	Dull.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 32° 15′, W. 22° 15′	3	NNW	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N.
Schooner Traveller, N. 38° 50′, W. 72° 45′	5	NE	D. clouds.....	Capt. Alex. Simpson. [R.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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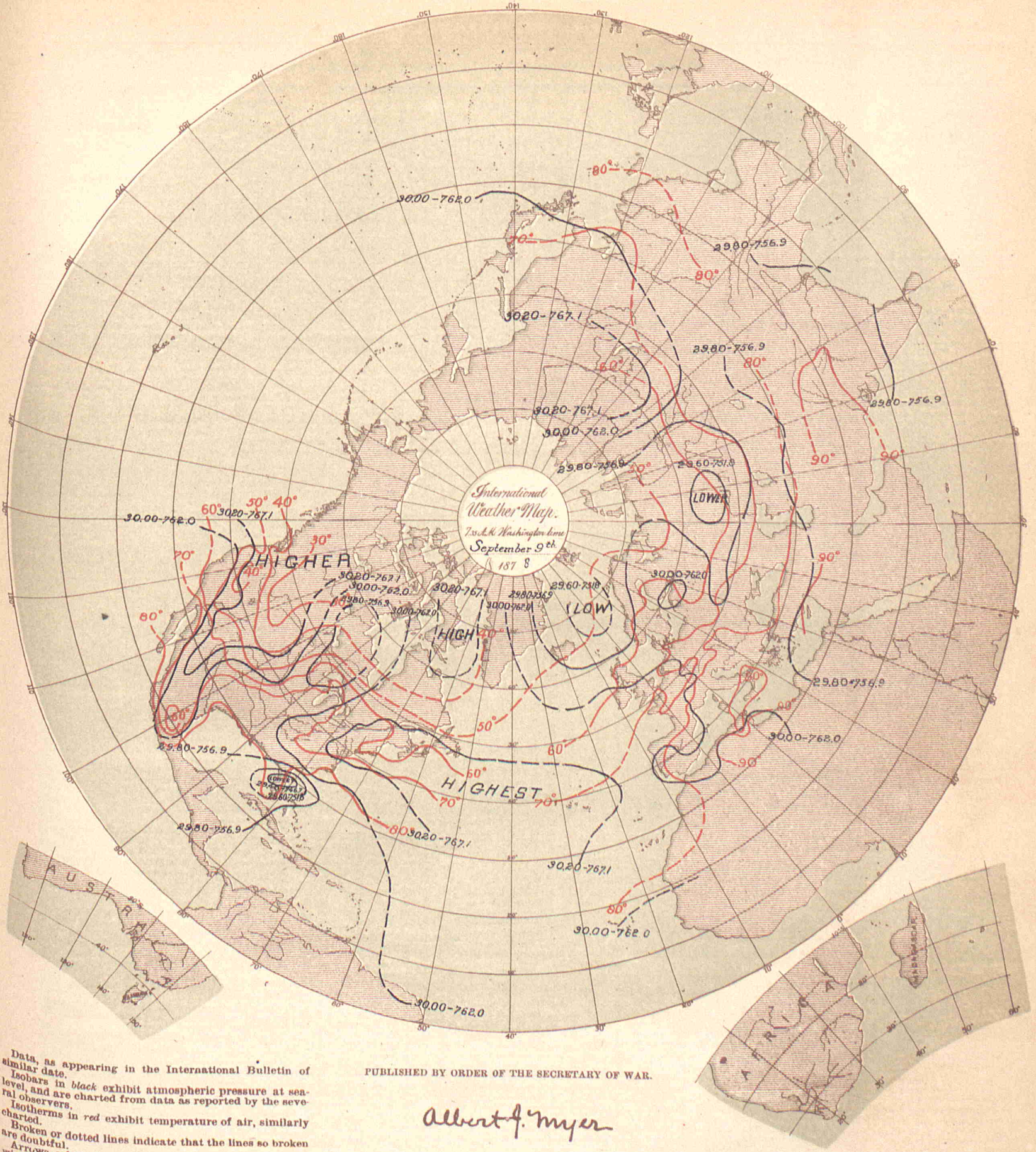
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeter	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.24	666.5	.....	.....	68.0	20.0	92	N	.....	.....	1	9cs	.....	.....	.....	0.5	13.	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

DANISH SERIES.

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

Copenhagen	29.93	760.2	29.98	761.4	64.6	18.1	74	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....
Fanöe	29.92	759.9	29.94	760.4	66.6	19.2	78	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.62	752.4	29.66	753.3	52.7	11.5	74	W	.....	.....	4	.....	6	.....	.....	.....	.....	.....
Vestervig	29.77	756.2	29.94	760.5	64.8	18.2	76	W	.....	.....	2	.....	4	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

FRENCH SERIES.

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

Alençon, Normal School	29.65	753.0	30.20	767.0	69.8	21	82	N	.....	.....	1	.....	5	.....	N	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.89	759.1	29.97	761.1	84.2	29	39	N	.....	.....	2	.....	0	.....	.....	0	0	Very cloudy	M. Giraud, Director.
Bar-sur-Seine	29.53	750.1	30.07	763.8	68.5	20.3	57	N	.....	.....	2	.....	8kn	.....	NW	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.83	757.7	30.11	764.8	70.7	21.5	59	NW	.....	.....	2	.....	8	.....	SW	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.24	742.8	30.12	765.1	64.0	17.8	84	NE	.....	.....	2	.....	5	.....	SW	0.260	6.6	Cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.59	751.5	30.13	765.2	68.4	20.2	76	W	.....	.....	1	.....	2k	.....	W	0	0	Slightly cov	A. Wagner, Director.
Brest, Naval Observatory	29.91	759.7	30.15	765.9	69.8	21.0	69	NNW	.....	.....	1	.....	8	.....	NW	0	0	.....	The Staff.
Carcassonne, Normal School	29.66	753.3	30.06	763.5	74.8	23.8	54	E	.....	.....	2	.....	5	W	W	0	0	Cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.54	750.4	30.09	764.2	75.6	24.2	85	NW	.....	.....	2	.....	4	SE	SE	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.76	756.0	30.08	763.9	68.4	20.2	71	NW	.....	.....	1	.....	2	NW	NW	0.118	3.0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.75	730.2	30.07	763.6	72.5	22.5	55	NW	.....	.....	1	.....	5	.....	W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.17	740.9	30.03	762.8	64.0	17.8	78	W	.....	.....	3	.....	5kn	.....	W	0.31	8.	Cloudy	Dr. Coulet, Director.
Commune de Gréasque*	28.88	733.5	30.02	762.5	82.6	28.1	35	NW	.....	.....	3	.....	2	NW	.....	0	0	¼ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.04	763.0	30.26	768.5	63.7	17.6	94	NW	.....	.....	1	.....	5	.....	W	0	0	Cloudy	Monillot, Director.
Le Mans, Normal School	29.85	758.2	30.15	765.9	70.7	21.5	55	W	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.3	30.08	764.1	64.8	18.2	62	SW	.....	.....	2	.....	5	.....	SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.05	763.2	30.08	764.0	75.4	24.1	93	W	.....	.....	3	.....	5	W	.....	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	29.02	737.1	30.04	762.9	68.5	20.3	78	N	.....	.....	1	.....	8kn	.....	N	0	0	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.76	756.0	29.98	761.5	86.7	30.4	59	NW	.....	.....	4	.....	2k	NW	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.99	736.3	30.01	762.2	77.7	25.4	53	N	.....	.....	1	.....	k	N	N	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.30	642.5	.....	.....	49.5	9.7	100	NW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Allnard, Director.
Rochefort, Naval Obs'y	30.15	765.7	30.18	766.5	75.2	24.0	69	WNW	.....	.....	3	.....	1	WNW	WNW	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.01	762.3	30.10	764.4	71.2	21.8	61	W	.....	.....	1	.....	2	.....	W	0	0	Slightlycl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.18	766.5	66.2	19.0	75	NW	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	M. H. Hercouet.
Tarbes, Normal School	29.01	736.9	30.07	763.6	69.8	21	73	SW	.....	.....	4	.....	10	W	SW	0	0	Covered	T. Hugnet. Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	78.8	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.42	36.	.....	L'Abbé Marchès.
Lyons	.....	.....	30.07	763.7	74.7	23.7	59	.....	.....	.....	.....	.....	3	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.90	759.5	84.4	29.1	35	WNW	.....	.....	3-4	.....	1	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.97	634.2	30.28	769.2	64.9	18.3	57	ENE	.....	.....	2	.....	2	.....	SE	0	0	.....	M. Cave.
Nice	.....	.....	29.92	759.9	77.9	25.5	78	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.82	757.5	30.10	764.5	68.4	20.2	62	NW	.....	.....	3	.....	6	.....	NW	Inap.	Inap.	.....	Marié Davy, Director
Perpignan	.....	.....	30.05	763.2	81.0	27.2	53	NW	18.6	8.33	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.72	577.0	.....	.....	58.5	14.7	.....	SW	.....	.....	1	.....	2	.....	.....	0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	29.95	760.6	30.11	764.8	68.2	20.1	68	WNW	.....	.....	1	.....	7	.....	NW	0	0	.....	E. Reron.
Toulouse, Observatory	29.47	748.4	30.19	766.9	71.1	21.7	63	NW	.....	.....	3	.....	6	.....	.....	0	0	.....	The Staff.
Tours	29.94	760.4	30.13	765.4	70.3	21.3	65	NW	.....	.....	1	.....	6	.....	N	0	0	.....	C. Marquet.
Versailles	.....	.....	30.12	765.0	70.2	21.2	53	WNW	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.82	757.3	29.84	757.9	71.8	22.1	99	NW	0.2	0.1	.....	10ck	.....	W	.....	Inap.	Inap.	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.13	740.0	29.98	761.4	71.1	21.7	73	W			2		6	W		0.12	3.	Thunder-storm..	Prof. Dr. Hoh.
Berlin	29.79	756.7	29.96	760.9	72.3	22.4	56	E			1		1			0	0	...	Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	73.2	22.9	54	E			2		0			0	0		Royal University Obs'y
Carlsruhe	29.54	750.4	29.96	761.0	63.7	17.6	100	SW			1		10			1.024	26.0	Thunder-storm...	Albert Senz.
Cassel	29.36	745.7	30.01	762.2	72.0	22.2	72	NNE			4		8	NW		0.022	0.55		Dr. H. Möhl.
Crefeld	29.82	757.5	29.99	761.7	71.2	21.8	68	NW			2		8k			0.04	1.		Director Lose.
Emden	29.93	760.1	29.96	761.0	69.1	20.6	82	WSW			3		4			0	0		Prof. Prestel.
Frankfort on the Main	29.61	752.0	30.00	761.9	71.4	21.9		SW			1		10			1.240	31.5		Physical Society.
Friedrichshafen	28.60	726.5	30.01	762.2	64.8	18.2	89	SSW			2		10	SW		0.264	6.7	Raining	M. Wilhelm.
Hamburg	29.88	759.0	29.95	760.7	68.2	20.1	73	SE			1		0			0	0	Clear.	Captain F. Hegemann.
Kiel	29.93	760.3	29.95	760.7	69.6	20.9	65	ESE			2		4			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.85	758.2	29.93	760.3	63.1	17.3	83	NE			2		6			0	0		Prof. E. Luther.
Köslin			29.94	760.5	65.8	18.8							3			0	0		H. Müller.
Leipsic, Observatory	29.53	750.0	29.93	760.3	75.7	24.3	51	NNE			2		7			0	0		Prof. Bruhns.
Memel, Naval School	29.93	760.1	29.97	761.3	63.9	17.7	68	NE			2		9s;ks						Reinbrecht and Skalweit.
Neufahrwasser	29.96	760.9	29.97	761.3	65.5	18.6	81	N			2		5			0.094	2.4		A. Lothes.
Posen	29.78	756.4	30.06	763.5	68.9	20.5	54	NW			1		6			0	0		Dr. Magener.
Strassburg (in Alsace)	29.47	748.6	30.01	762.3	66.7	19.3	76	W			3		10	W				Raining	Astronomical Observatory.
Stuttgart	29.05	737.8	29.97	761.2	63.1	17.3	87	W			1		10			0.689	17.5	Light rain ..	Prof. Schoder.
Treves, (Trier)	29.45	748.0	29.97	761.3	70.3	21.3	64	W			4		6			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.48	723.3	29.93	760.3	65.7	18.7	85	NW	1.1	0.5			9ck;n		W	0.512	13.0		Dr. Von Bebber.
Wustrow, Naval School	29.99	761.7	30.03	762.7	68.2	20.1	70	NE			1		10			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.48	748.9	29.85	758.3	88.0	31.1		NE			1.0							⅛ Clear	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.62	752.3	29.67	753.6	91.4	33.0	58	SE	23?	10.3?			4			0.62	15.7	D. clouds	
Deesa	29.27	743.4	29.74	755.4	87.1	30.6	78	SSE					2	N	SE	0	0	D. clouds	
Bombay	29.73	755.2	29.77	756.1	82.1	27.8	90	S	23	10.3			2	S	SW	0.90	22.9	D. clouds	
Poona	27.75	704.9	29.74	755.4	79.7	26.5	70	WSW					5		WSW	0	0	D. clouds	
Lahore	28.91	734.4	29.63	752.6	93.9	34.4	49	N	0.7	0.3			0			0	0	Blue sky	
Belgaum	27.30	693.5	29.86	758.5	71.0	21.7	91	WSW	2	0.9			7		WSW	0.28	7.1	Showery	
Roorkee	28.71	729.3	29.59	751.5	89.8	32.1	68	SW	2	0.9			4						
Agra	29.08	738.7	29.64	752.7	90.7	32.6	74	N					2						
Nagpur	28.68	728.5	29.71	754.6	86.6	30.3	69	S	2.7	1.2			6		N	0	0		
Lucknow																			
Allahabad	29.34	745.2	29.64	752.9	87.6	30.9	85	Calm	0.7	0.3			7	E		0	0	D. clouds	
Patna	29.55	750.5	29.73	755.1	80.7	27.1	82	E	1.1	0.5			10	E	E	0	0	Overcast	
Hazaribagh	27.70	703.6	29.70	754.4	79.0	26.1	85	ESE	5.9	2.6			10		SE	0.02	0.5	Thunder-storm	
Cuttack	29.60	752.0	29.69	754.0	87.6	30.9	71	S	1.5	0.7			4			0	0	D. clouds	
Calcutta (Alipore)	29.72	754.8	29.74	755.3	84.5	29.2	83	S	4.0	1.8			4	S	S	0	0	D. clouds	
Goalpara	29.35	745.4	29.74	755.3	78.7	25.9	91	SSW	2.5	1.1			9			0.71	18.0	D. clouds	
Chittagong	29.71	754.6	29.80	756.9	84.9	29.4	85	SW	3.2	1.4			9			0	0	Overcast	
Sibsagar	29.38	746.2	29.71	754.7	80.6	27.0	89	SW	2.8	1.2			10			1.19	30.2	Raining	
Jubbulpore	28.36	720.3	29.71	754.6	82.7	28.2	77	NW	1.8	0.8			2			0	0	D. clouds	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.51	749.5	29.90	759.5	82.0	27.8	42	S	0.7	0.3	.....	.....	5	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.78	756.4	29.89	759.1	81.7	27.6	44	NE	1.8	0.8	.....	.....	3	SSW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.69	754.0	29.87	758.7	83.3	28.5	45	NE	1.3	0.6	.....	.....	4	E	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.57	725.7	29.84	757.9	82.4	28.0	49	W	.....	.....	8	.....	5	.....	.....	0.606	15.4	.....	Prof. Trionfini Carlo.
Milan	29.40	746.7	29.90	759.4	77.9	25.5	67	N	.....	.....	1	.....	6	SW	.....	0.516	13.1	.....	Prof. Schiaparelli.
Moncalieri	28.97	735.8	29.84	758.0	80.8	27.1	50	SSE	0	0	.....	.....	7	.....	.....	0.035	0.9	.....	Prof. P. F. Denza.
Mondovi	28.01	711.4	29.85	758.3	80.1	26.7	47	NNW	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.70	754.4	29.91	759.8	82.2	27.9	46	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.73	755.1	29.89	759.2	81.1	27.3	56	SW	.....	.....	2	.....	4	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.56	750.9	29.87	758.6	84.6	29.2	35	ENE	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.62	752.3	29.86	758.5	88.2	31.2	32	W	.....	.....	2	.....	3	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.50	757.0	29.89	759.1	79.5	26.4	66	W	5.6	2.5	.....	.....	8	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.84	758.0	29.89	759.1	78.1	25.6	63	NE	.....	.....	.....	.....	3	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.40	721.3	29.91	759.6	78.1	25.6	46	NE	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. P. Serpieri.
Rome	29.72	754.8	29.89	759.1	87.6	30.9	35	W	14.3	6.4	.....	.....	1	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.71	754.5	29.90	759.4	85.1	29.5	44	SW	.....	.....	4	.....	5	SE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.64	752.8	29.88	759.0	75.6	24.2	75	N	3.1	1.4	.....	.....	4	N	.....	0.524	13.3	.....	Prof. C. De Giorgi.
Cagliari	29.74	755.3	29.92	760.0	80.8	27.1	69	S	.....	.....	2	.....	0	.....	.....	0.157	4.0	.....	Prof. A. Pacinotti.
Cosenza	29.03	737.4	29.92	759.9	78.6	25.9	69	E	1.8	0.8	.....	.....	9	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.64	752.8	29.88	759.0	78.1	25.6	66	ENE	7.4	3.3	.....	.....	7	.....	.....	0.976	24.8	.....	Prof. G. Cacciatore.
Syracuse	29.82	757.4	29.90	759.4	72.7	22.6	92	E	2.5	1.1	.....	.....	10	W	.....	1.354	34.4	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.35	745.5	29.91	759.6	83.8	28.8	50	ESE	3.1	1.4	.....	.....	2	SE	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.68	753.9	29.87	758.7	75.6	24.2	90	SE	7.7	3.4	.....	.....	7cks	S	.....	0.030	0.76	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory.	29.56	761.0	30.03	762.7	75.3	24.1	97	SSE	7.7	3.4	.....	.....	10ns	.....	.....	0.570	14.48	Light rain	
Tokei (Yeddo) University.	29.92	760.0	30.02	762.4	75.7	24.3	98	S	7.2	3.2	.....	9cs	1s	.....	.....	0.645	16.39	Cloudy	Prof. E. V. Veeder.

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

MEXICAN SERIES.

By authority of the Secretary of Public Works.

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

Cuernavaca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	P. Ceballos.
Guadalajara	25.09	636.4	29.99	761.7	61.7	16.5	90	Calm	.....	.....	0	0	10ks	.....	E	0.039	1.0	Covered	Prof. L. Perez.
Guanajuato	23.69	601.9	29.83	757.9	64.0	17.8	78	ENE	.....	.....	.....	1	0	.....	.....	0.039	1.0	Clear	F. Ortiz.
Leon	24.41	619.9	29.93	760.1	63.7	17.6	94	SW	.....	.....	1	2c	4k	NW	Calm	0.394	10.00	½ cloudy	Prof. M. Leal.
Mexico	23.10	586.8	30.08	764.0	58.1	14.5	85	Calm	0	0	.....	2c	1k	NE	.....	0.024	0.6	Clear	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	64.6	18.1	93	NNW	.....	.....	1	0	2k	.....	SE	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.35	593.2	30.11	764.7	57.9	14.4	90	N	1.6	0.7	.....	1cn	2cs	.....	.....	0.85	21.46	Clear	Prof. B. Gonzalez.
Tlacotalpan	29.88	758.9	29.89	759.2	78.8	26	96	SE	.....	.....	2	0	0	.....	.....	0	0	.....	M. M. Cházaro.
San Luis Potosi	24.27	615.8	30.19	766.7	62.0	16.7	37	E	3.1	0.4	.....	4	3	N	E	0	0	½ cloudy	G. Barroeta, M. D.
Vera-Cruz	29.91	759.7	29.94	760.4	79.7	26.5	84	NW	.....	.....	.....	0	1k	.....	.....	0	0	Clear	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	50.9	10.5	80	NE	.....	.....	1	0	5	.....	E	0	0	½ cloudy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.0	56.3	13.5	89	ENE	0	0	.....	0	1	.....	Calm	0.914	23.2	Clear	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.35	720.1	29.97	761.2	75.7	26.5	81	Calm	0	0	.....	.....	10	.....	NE	0.028	0.7	Covered	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.6 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.05	763.3	30.05	763.3	65.8	18.8	.....	W	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.93	760.1	29.98	761.5	69.8	21.0	.....	WNW	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	29.97	761.1	29.97	761.1	66.6	19.2	.....	WSW	.....	.....	1	.....	.....	.....	.....	0.012	0.3	.....	
Hellevoetsluis	30.00	762.0	30.00	762.0	68.5	20.3	84	WNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.97	761.2	30.02	762.4	72.9	22.7	68	WSW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer: Corrected for instru'tal error and temperature. Inches.	Barometer: Corrected for instru'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.69	754.2	29.75	755.6	57.6	14.2	90	S	23.9	10.7	.....	.....	10	.....	.....	0.685	17.4	Heavy rain.	
Bröno	29.61	752.2	29.65	753.2	58.6	14.8	76	SSW	4	2	.....	.....	10	.....	.....	0.276	7.0	.....	
Christiania	29.71	754.5	29.85	758.1	63.9	17.7	82	SSW	11	5	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.58	751.3	29.62	752.4	53.6	12.0	76	NNE	4	2	.....	.....	1	.....	.....	0.256	6.5	.....	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	30.08	764.0	30.27	768.8	71.4	21.9	79	SE	6.3	2.8	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.6	29.97	761.3	85.1	29.5	36	ESE	14.3	6.4	.....	.....	4	SSW	.....	0.079	2.0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.0	30.09	764.2	76.2	24.6	50	NE	3.1	1.4	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.63	752.6	29.98	761.4	79.3	26.3	54	E	6.3	2.8	.....	.....	9	SE	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.20	767.1	30.27	768.9	73.8	23.2	65	SE	5.6	2.5	.....	.....	4	.....	.....	0	0	.....	

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

Naval Series. Vessels.															Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 29', W. 22° 49'	.....	.....	30.26	768.5	73.4	23	.....	ENE	.....	.....	3	.....	9	.....	ENE	2	.....	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03', E. 12° 02'	.....	.....	29.98	761.5	70.7	21.5	.....	WNW	.....	.....	3	.....	7	.....	W	2	W	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	29.94	760.5	86.0	30.0	.....	NNW	.....	.....	3	.....	8	.....	.....	3	SW	Gloomy	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	29.98	761.5	77.0	25.0	.....	W	.....	.....	1	.....	9	.....	W	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.78	756.4	87.4	30.8	.....	NNW	.....	.....	2	.....	8	.....	NNW	1	.....	Thunder; lightn'g	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.52	749.9	29.93	760.3	68.0	20.0	65	WNW	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.53	750.1	29.95	760.8	59.5	15.3	78	E	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds. ..	Astronomical Obs.
Dorpat	29.81	757.1	30.04	763.1	63.9	17.7	47	ENE	4	2	.....	.....	7ck	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.93	761.4	29.98	761.6	59.9	15.5	66	W	11	5	.....	.....	5ks;n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.17	741.0	29.78	756.4	72.3	22.4	56	SE	4	2	.....	.....	9ck;n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.85	758.1	29.92	759.9	78.1	25.6	53	S	4	2	.....	.....	8n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.96	760.9	29.98	761.4	76.1	24.5	76	SSE	4	2	.....	.....	2	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.39	746.5	29.93	760.3	54.7	12.6	81	N	13	6	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.68	753.8	29.88	758.9	69.3	20.7	37	NNW	2	1	.....	.....	5c	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	29.96	761.0	29.98	761.5	46.9	8.3	84	WNW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.59	726.1	29.95	760.6	77.0	25.0	35	NW	22	10	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.97	761.3	29.89	759.2	71.2	21.8	33	W	4	2	.....	.....	4k	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.15	740.3	29.61	752.5	52.7	11.5	89	NW	11	5	.....	.....	10n	.....	.....	.....	.....	Light rain...	Cand. Fatjanow.
Kasan	29.34	745.2	29.61	752.0	54.1	12.3	90	W	4	2	.....	.....	10	.....	.....	.....	.....	Raining.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.67	728.1	29.60	751.7	54.3	12.4	94	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.65	753.2	29.88	758.9	76.8	24.9	48	NNW	2	1	.....	.....	4k	.....	.....	.....	.....	.....	
Tashkend	28.33	719.6	29.97	761.2	74.8	23.8	71	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.33	745.0	29.82	757.5	78.8	26.0	33	SE	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.93	760.3	30.23	767.7	54.1	12.3	61	ENE	7	3	.....	.....	1	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.85	758.3	30.00	761.9	64.4	18.0	66	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.91	759.8	30.02	762.4	81.3	27.4	69	SE	1.4	0.61	.....	.....	6cs	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.10	764.6	30.16	766.0	74.5	23.6	69	N	0.9	0.40	.....	2	4	E	.....	Inap.	Inap.	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.21	691.0	.....	.....	71.6	22.0	68	NE	8.8	3.95	.....	.....	.....	.....	.....	0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.89	708.4	30.00	762.1	82.8	28.2	47	S	13.4	6.00	.....	3	4	E	.....	0.110	2.8	.....	The Staff.
Murcia, Met. Obs'y	29.85	758.3	30.00	761.9	88.7	31.5	49	NE	2.8	1.25	.....	1	5	NE	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.16	740.6	30.02	762.6	75.6	24.2	64	NE	11.8	5.28	.....	.....	3	.....	.....	0	0	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.67	753.7	29.74	755.4	81.9	27.7	81	SSW	8.9	4.0	.....	9c;ck	1sk	NW	.....	0.687	2.2	Cloudy.....	Benito Vines, S. J
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.89	759.1	29.98	761.5	85.5	29.7	44	ESE	22.0	9.8	.....	0	7	.....	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.88	759.0	29.97	761.3	82.5	28.2	89	SE	0	0	.....	3c	3k	SE	SE	0	0	Clear?.....	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.86	758.5	29.90	759.5	55.4	13 0	.....	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.86	758.5	29.91	759.8	59.7	15.4	85	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.82	757.4	29.87	758.7	57.6	14.2	96	SSW	.....	.....	6	.....	10	.....	.....	0.020	0.5	.....	
Stockholm	29.80	757.0	29.98	761.5	66.2	19.0	73	S	.....	.....	4	.....	6	.....	.....	0.024	0.6	.....	
Wisby	29.87	758.6	29.93	760.1	62.6	17.0	82	WNW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.88	758.9	29.95	760.8	66.7	19.3	72	S	10.7	4.8	.....	.....	3	.....	W	0.046	1.18	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.61	726.7	29.97	761.2	78.4	25.8	43	NW	.....	.....	2	.....	7	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.43	722.1	30.04	763.1	61.2	16.2	99	W	.....	.....	1	.....	10	.....	.....	1.465	37.2	Thunder-storm	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.5 mm.; Thermometer, +6.7 cent.; Relative Humidity, —18 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	29.91	759.6	75.2	24.0	52	ENE	19	8.5	.....	.....	8	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.06	763.5	90.5	32.5	.....	S	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.63	752.6	29.74	755.4	92.8	33.8	55	SW	.....	.....	3	.....	1ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	30.10	764.5	30.17	766.3	61.9	16.6	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.90	759.4	30.19	766.8	64	17.8	.....	SW	1	0.4	.....	2c	2s	W	W	0	0	Clear	W. R. Bigg.
*Chatham, N B	30.16	766.1	30.22	767.6	58	14.4	88	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.21	767.3	30.25	768.3	59	15.0	79	SW	9	4.0	.....	.....	8ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.99	761.7	30.17	766.3	63.8	17.7	89	W	.....	.....	1	5cs	0	NW	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.04	763.0	30.20	767.1	63	17.2	87	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.21	767.3	30.25	768.3	47.3	8.5	92	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.15	765.8	30.17	766.3	58	14.4	87	SW	15	6.7	.....	5k	5s	W	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.23	767.8	30.30	769.6	57.7	14.3	80	N	2	0.9	.....	2cs	0	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry Manitoba	29.04	737.6	29.86	758.4	48	8.9	85	NW	10	4.5	.....	5k	5ks	NW	NW	0.240	6.10	Cloudy	James Stewart.
Granton, Ontario	29.02	737.1	30.08	764.0	66	18.9	100	E	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.16	766.1	30.29	769.4	55	12.8	94	W	2	0.9	.....	2c	0	W	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.16	766.1	65.2	18.4	93	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	30.18	766.6	30.20	767.1	57	13.9	81	W	.....	.....	1	.....	10	.....	.....	0.03	0.8	Cloudy	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.21	767.3	67	19.4	92	S	9	4.0	.....	5ck	0	SW	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.19	766.8	30.23	767.8	64.4	18.0	71	W	7	3.1	.....	6ck	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.03	762.7	30.23	767.8	64	17.8	89	SW	7	3.1	.....	5cs	2ks	NW	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.42	747.3	30.09	764.3	69	20.6	90	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.432	747.57	30.16	766.1	64.2	17.9	89	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.13	765.3	68	20.0	90	S	8	3.6	.....	5s	0	.....	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.20	767.1	30.24	768.1	61.3	16.3	.....	NW	2	0.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.48	748.8	30.10	764.5	70	21.1	87	E	9	4.0	.....	0	2s	.....	SE	0	0	Clear	M. Payne.
*Quebec, Quebec	29.92	760 0	30.24	768.1	64	17.8	89	Calm	.....	.....	0	.....	10n	.....	Calm	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.69	754.1	30.13	765.3	66	18.9	87	SE	2	0.9	.....	0	5s	.....	SE	Inap	Inap.	Fair	W. H. McIntyre.
St. Andrews, N. B	30.23	767.8	30.28	769.1	55	12.8	88	W	2	0.9	.....	2k	5ks	N	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	30.15	765.8	30.31	769.9	57	13.9	87	S	8	3.6	.....	0	1ks	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.36	745.7	30.05	763.3	69	20.6	80	SE	16	7.2	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	29.33	745.0	30.08	764.0	70	21.1	85	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.10	764.5	63.1	17.3	97	SE	5	2.2	.....	2c	0	SE	.....	0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	30.24	768.1	30.26	768.6	61	16.1	75	SW	10	4.5	.....	5ck	0	NW	.....	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.79	756.7	30.16	766.1	68	20.0	86	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	61.0	16.1	82	NW	.....	.....	.....	4c	4s	.....	.....	0.02	0.5	Cloudy	John Delany.

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

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0–10	CLOUDS. Amount. Low'r 0–10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	30.05	763.3	30.27	768.8	61	16.1	71	SE	3	1.3	.....	2c	0	Calm	.....	0	0	Fair	
Alpena, Michigan	29.33	745.0	29.94	760.5	71	21.7	90	S	8	3.6	....	1cs	Haze	W	.....	0	0	Clear	
Atlantic City, New Jersey	30.22	767.6	30.24	768.1	69	20.6	79	NE	19	8.5	.....	8k	0	NE	.....	0	0	Fair	
Augusta, Georgia	29.85	758.2	30.03	762.7	74	23.3	86	NE	8	3.6	.....	.....	10ks	.....	E	0	0	Cloudy	
Baltimore, Maryland	30.19	766.8	30.24	768.1	66	18.9	79	E	5	2.2	.....	10k	0	NE	.....	0	0	Cloudy	
Barnegat, New Jersey	30.23	767.8	30.26	768.6	69	20.6	75	E	16	7.2	.....	5k	0	E	.....	0	0	Fair	
Bismarck, Dakota	28.36	720.3	30.22	767.6	40	4.4	82	NW	13	5.8	.....	0	0	.....	.....	0.16	4.1	Clear	
Boerne, Texas	28.41	721.6	.....	.....	75	23.9	90	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.53	699.2	30.49	774.4	45	7.2	67	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.18	766 6	30.34	770.6	54	12.2	97	NW	4	1.8	.....	4k	4s;fg	E	E;Calm	0	0	Cloudy	
Brackettville, Texas	28.79	731.3	29.80	756.9	74	23.3	95	E	2	0.9	.....	.....	10n	.....	SE	1.02	25.9	Light rain	
Breckenridge, Minnesota	28.98	736.1	29.98	761 5	48	8.9	100	NW	12	5.4	.....	.....	10s	.....	NW	0.07	1.8	Cloudy	
Brownsville, Texas	29 86	758.4	29.93	760.2	77	25.0	95	Calm	.....	.....	0	8cs	0	SE	.....	0	0	Fair	
Buffalo, New York	29.45	748.0	30.13	765.3	64	17.8	78	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	81	27.2	55	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.04	763.0	30.30	769.6	64	17.8	78	S	6	2.7	.....	10c	0	W	.....	0	0	Cloudy	
Cairo, Illinois	29.55	750.6	29.92	760.0	75	23.9	77	SE	5	2.2	.....	8ck	0	SW	.....	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	59	15.0	64	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.23	640.8	30.03	762.7	63	17.2	33	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.83	681.5	30.31	769.9	65	18.3	54	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.43	696.7	30.00	762.0	45	7.2	75	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.08	764.0	30.08	764.0	78	25.6	86	NE	16	7.2	.....	0	Haze	.....	.....	Inap.	Inap.	Clear	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	75	23.9	90	NE	26	11.6	.....	.....	10s	.....	NE	0.20	5.1	Cloudy	
Cape Lookout, N. Carolina	30.05	763.3	30.06	763.5	81	27.2	78	E	28	12.5	.....	5k	0	E	.....	0.06	1.5	Fair	
Cape May, New Jersey	30.19	766.8	30.22	767.6	67	19.4	90	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.13	739.9	29.80	756.9	78	25.6	83	S	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	
Charleston, South Carolina	29.95	760.7	30.02	762.5	77	25.0	91	NE	15	6.7	.....	.....	10n	.....	E	0.02	0.5	Light rain	
Cheyenne, Wyoming	24.31	617.5	30.25	768.3	32	0.0	89	N	12	5.4	.....	.....	10n	.....	Calm	0.10	2.5	Light snow	
Chicago, Illinois	29.21	741.9	29.86	758.4	75	23.9	81	SW	6	2.7	.....	.....	10s	.....	SW	0.15	3.8	Cloudy	
Cincinnati, Ohio	29.39	746.5	30.01	762.2	73	22.8	67	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cleveland, Ohio	29.38	746.2	30.08	764.0	66	18.9	79	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.15	715.0	29.74	755.4	71	21.7	95	Calm	0	0	.....	2ck	2s	Calm	W	1.29	32.8	Fair	
Columbus, Ohio	29.25	742.9	30.06	763.5	69	20.6	75	SE	5	2.2	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	28.04	712.2	29.64	752.8	72	22.2	90	SE	2	0.9	.....	0	10s	.....	SE	1.16	29.5	Cloudy	
Corsicana, Texas	29.46	748.3	29.91	759.7	76	24.4	91	SE	3	1.3	.....	2cs	2s	NW	Calm	0	0	Fair	
Davenport, Iowa	29.26	743.2	29.86	758.4	70	21.1	90	SW	8	3.6	.....	4cs	4s	SW	SW	0.79	20.1	Clearing	
Decatur, Texas	28.78	731.0	29.90	759.4	74	23.3	86	SE	6	2.7	.....	0	4s	.....	.....	Inap.	Inap.	Threatening	
Denison, Texas	29.13	739.9	29.89	759.2	75	23.9	95	SE	3	1.3	.....	5k	2s	SE	SE	0.17	4.3	Fair	
Denver, Colorado	25.08	637.0	30.30	769.6	40	4.4	73	N	5	2.2	.....	.....	10s	.....	NE	0.08	2.0	Cloudy	
Des Moines, Iowa	29.10	739.1	29.96	761.0	64	17.8	73	NW	13	5.8	.....	.....	10s	NW	.....	0.06	1.5	Cloudy	
Detroit, Michigan	29.38	746.2	30.02	762.5	71	21.7	80	S	4	1.8	.....	1k	0	SW	.....	0	0	Clear	
Dodge City, Kansas	27.60	701.0	29.92	760.0	48	8.9	85	N	20	8.9	.....	0	5s	.....	N	0.22	5.6	Fair	
Dubuque, Iowa	29.19	741.4	29.85	758.2	69	20.6	85	SW	2	0.9	.....	.....	10s	.....	SW	0.71	18.0	Cloudy	
Duluth, Minnesota	29.06	738.1	29.71	754.6	63	17.2	83	NW	20	8.9	.....	5k	2s	NW	NW	0.02	0.5	Cloudy	
Eagle Pass, Texas	29.15	740.4	29.86	758.4	75	23.9	95	E	4	1.8	.....	.....	10ks	.....	SE	0.54	13.7	Cloudy	
Eastport, Maine	30.25	768.3	30.31	769.9	60	15.6	77	SW	7	3.1	.....	5ck	0	Calm	.....	0	0	Fair	
Edinburg, Texas	.....	.....	.....	.....	77	25.0	91	S	.....	.....	1	.....	5s	.....	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	74	23.3	69	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.41	747.0	30.10	764.5	69	20.6	70	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.19	741.4	29.80	756.9	69	20.6	95	SE	20	8.9	.....	.....	10s	.....	SE	0.80	20.3	Cloudy	
Florence, Arizona	28.43	722.1	30.03	762.7	65	18.3	73	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.66	651.8	29.72	754.9	62	16.7	56	NE	12	5.4	.....	5cs	0	NE	.....	0	0	Fair	
Fort Davis, Texas	25.22	640.6	30.18	766.6	66	18.9	73	W	1	0.4	.....	2k	0	SW	.....	0.16	4.1	Fair	
Fort Gibson, Indian Ter	29.38	746.2	29.89	759.2	74	23.3	95	E	1	0.4	.....	.....	10s	.....	N	0.08	2.0	Threatening	
Fort Griffin, Texas	28.70	729.0	29.90	759.4	72	22.2	90	Calm	0	0	.....	.....	10s	.....	N	0.11	2.8	Cloudy	
Fort McKavett, Texas	27.74	704.6	29.57	751.1	76	24.4	91	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.88	758.9	64	17.8	89	NW	22	9.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Fredericksburg, Texas	28.22	716.8	29.71	754.6	75	23.9	90	Calm	0	0	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.87	758.7	29.91	759.7	80	26.7	87	NW	5	2.2	.....	0	5ks	.....	NW	0	0	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.28	743.7	29.89	759.2	75	23.9	77	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.22	742.2	29.96	761.0	73	22.8	76	SE	8	3.6	.....	2cs	2s	Calm	Calm	0.22	5.6	Fair	
Indianola, Texas	29.00	759.4	29.93	760.2	83	28.3	79	Calm	0	0	.....	5c	0	NW	.....	0	0	Fair	
Jacksboro, Texas	28.81	731.8	29.89	759.2	73	22 8	85	Calm	0	0	.....	8k	0	SW	.....	0	0	Cloudy	
Jacksonville, Florida	29.77	756.1	29.79	756.7	80	26.7	82	NE	24	10.7	.....	.....	10s	.....	NE	2.93	74.4	Cloudy	
Keokuk, Iowa	29.24	742.7	29.82	757.4	73	22.8	90	SW	3	1.3	.....	.....	10s	.....	SW	0.51	13.0	Cloudy	
Key West, Florida	29.55	750.6	29.58	751.3	82	27.8	83	SW	32	14.3	.....	.....	10s	.....	SW	0.55	14.0	Cloudy	
Kittyhawk, North Carolina	30.10	764.5	30.12	765.0	76	24.4	91	NE	22	9.8	.....	0	0	.....	.....	0.15	3.8	Clear	
Knoxville, Tennessee	29.11	739.4	30.10	764.5	67	19.4	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.09	738.9	29.79	756.7	69	20.6	85	W	9	4.0	.....	.....	10n	.....	W	0.85	21.6	Light rain	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	57	13.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lead City, Dakota	25.07	636.8	30.34	770.6	34	1.1	79	W	5	2.2	.....	.....	10s	.....	N	0.48	12.2	Cloudy	
Leavenworth, Kansas	29.17	740.9	30.00	762.0	57	13.9	87	N	16	7.2	.....	.....	10ks	.....	N	0.85	21.6	Cloudy	
Los Angeles, California	29.59	751.6	29.92	760.0	56	13.3	81	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.47	748.5	30.01	762.2	72	22.2	71	S	4	1.8	.....	2c	Sm'e	SW	Calm	0	0	Smoky	
Lynchburg, Virginia	29.53	750.0	30.20	767.1	67	12.4	84	NE	4	1.8	.....	.....	10ks	.....	Calm	0.04	1.0	Cloudy	
Marquette, Michigan	29.07	738.4	29.72	754.9	70	21.1	85	SE	14	6.3	.....	.....	10n	.....	Calm	0.44	11.2	Light rain	
Mason, Texas	28.27	718.0	29.95	760.7	73	22.8	95	SW	1	0.4	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Memphis, Tennessee	29.68	753.9	29.98	761.5	76	24.4	76	SE	4	1.8	.....	10cs	0	Calm	.....	0	0	Cloudy	
Milwaukee, Wisconsin	29.15	740.4	29.84	757.9	72	22.2	99	S	8	3.6	.....	.....	10s	.....	S	0.01	0.3	Cloudy	
Mobile, Alabama	29.90	759.4	29.94	760.5	75	23.9	81	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.77	756.1	30.00	762.0	72	22.2	75	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.11	739.4	30.14	765.5	67	19.4	79	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	24 17	613.9	30.53	775.4	51	10.6	93	NE	13	5.8	.....	10ks	2s	NE	NE	0	0	Cloudy	
Nashville, Tennessee	29.52	749.8	30.04	763.0	74	23.3	72	Calm	0	0	.....	2c	Haze	W	Calm	0	0	Fair	
New Haven, Connecticut	30.20	767.1	30.32	770.1	58	14.4	88	NE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
New London, Connecticut	30.27	768.8	30.32	770.1	56	13.3	94	N	6	2.7	.....	0	Sqhz	.....	NE;Calm	0	0	Fair	
New Orleans, Louisiana	29.85	758.2	29.91	759.7	79	26.1	78	NE	8	3.6	.....	0	Haze	.....	Calm	0.95	24.1	Clear	
Newport, Rhode Island	30.26	768.6	30.31	769.9	58	14.4	94	N	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
New York, New York	30.12	765.0	30.39	769.6	63	17.2	83	NE	10	4.5	.....	1k	5ks	NE	NE	0	0	Fair	
Norfolk, Virginia	30.11	764.8	30.16	766.1	73	22.8	90	NE	9	4.0	.....	.....	10s	.....	NE	0.34	8.6	Cloudy	
North Platte, Nebraska	27.37	695.2	30.03	762.7	40	4.4	91	NW	12	5.4	.....	2k	0	W	.....	0.24	6.1	Clear	
Olympia, Washington Ter.	30.21	767.3	30.25	768.3	40	4 4	100	NE	2	0.9	.....	.....	Fog	.....	NE	0	0	Foggy	
Omaha, Nebraska	28.97	735.8	30.04	763.0	52	11.1	86	NW	12	5.4	.....	5k	5s	SW	NW	1.32	33.5	Cloudy	
Oswego, New York	29.92	760.0	30.24	768.1	64	17.8	78	S	6	2.7	.....	5c	0	W	.....	0	0	Fair	
Pembina, Dakota	29.09	738.9	29.92	760.0	43	6.1	92	NW	12	5.4	.....	.....	10s	.....	NW	0.15	3.8	Cloudy	

UNITED STATES SERIES.—Continued.

Stations.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10	0—10.	From—	From—	Inches.	Millimeters.		
Philadelphia, Pa	30.24	768.1	30.29	769.4	60	15.6	94	NE	12	5.4			10s;fg		E;Calm	0	0	Cloudy	
Phœnix, Arizona	28.74	730.0			77.	25.0	49	E			2	5ck	0	SW		0	0	Fair	
Pike's Peak, Colorado	17.84	452.2	30.06	763.5	15	— 9.4	82	SW	14	6.3		0	0			0.30	7.6	Clear	
Pioche, Nevada	24.25	615.9	30.02	762.5	42	5.6	19	NW	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.35	745.5	30.15	765.8	63	17.2	83	SE	4	1.8		2k	0	S		0	0	Fair	
Port Huron, Michigan	29.38	746.2	30.02	762.5	71	21.7	80	S	12	5.4		5c	Haze	W		0	0	Fair	
Portland, Maine	30.26	768.6	30.31	769.9	58	14.4	76	W	1	0.4		1k	Fog;hz	Calm		0	0	Clear	
Portland, Oregon	30.15	765.8	30.26	768.6	53	11.7	67	NW	5	2.2		0	Sm'e		NW	0	0	Clear.	
Prescott, Arizona	24.88	631.9	30.24	768.1	50	10.0	65	Calm	0	0		0	0			0	0	Clear	
Pilot Point, Texas	29.19	741.4	29.98	761.5	75	23.9	95	SE	5	2.2			10n		SE	Inap.	Inap.	Light rain	
Punta Rassa, Florida	29.20	741.7	29.22	742.2	79	26.1	87	SW	24	10.7			10n		SW	0.63	16.0	Light rain	
Red Bluff, California	29.64	752.8	29.99	761.7	70	21.1	24	N	8	3.6		0	Haze		Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.95	760.7	79	26.1	78	SE	4	1.8		2cs	2s	Calm	SE	0	0	Fair	
Rochester, New York	29.57	751.1	30.17	766.3	64	17.8	73	S	9	4.0		0	0			0	0	Clear	
Roseburg, Oregon	29.56	750.8	30.14	765.5	42	5.6	78	Calm	0	0		0	Haze		Calm	0	0	Clear	
Sacramento, California	29.84	757.9	29.92	760.0	59	15.0	48	N	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.39	746.5	29.94	760.5	73	22.8	85	SW	4	1.8			10n		Calm	1.22	31.0	Light rain	
St. Marks, Florida	29.79	756.7	29.81	757.2	78	25.6	78	NE	20	8.9		8ck	0	NE		0.04	1.0	Fair	
St. Paul, Minnesota	29.02	737.1	29.82	757.4	59	15.0	76	W	10	4.5			10s		Calm	Inap.	Inap.	Cloudy	
Salt Lake City, Utah	25.89	657.6	30.22	767.6	45.0	7.2	53	NE	1	0.4		2k	0	W		0	0	Fair	
San Antonio, Texas	29.25	742.9	29.80	756.9	77	25.0	91	SE	1	0.4		2k	5s	Calm	SE	0	0	Cloudy.	
San Diego, California	29.87	758.7	29.94	760.5	62	16.7	100	N	4	1.8			Fog			0	0	Foggy	
Sandusky, Ohio	29.40	746.7	30.05	763.3	70	21.1	75	S	14	6.3		5c	0	N		0	0	Fair	
Sandy Hook, New Jersey	30.26	768.6	30.29	769.4	63	17.2	89	E	20	8.9		10k	0	E		0	0	Cloudy	
San Francisco, California	29.88	758.9	29.95	760.7	55	12.8	90	SW	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	54	12.2	43	N	2	0.9		5c	0	Calm		0	0	Fair	
Savannah, Georgia	29.86	758.4	29.95	760.7	77	25.0	91	NE	12	5.4		0	5ks		NE	0.24	6.1	Fair	
Shreveport, Louisiana	29.72	754.9	29.93	760.2	77	25.0	91	SE	2	0.9		2c	0	S		0	0	Fair	
Silver City, New Mexico	24.34	618.2			55	12.8	59	Calm	0	0		0	0			0	0	Clear.	
Smithville, North Carolina	30.01	762.2	30.05	763.3	80	26.7	82	NE	14	6.3		0	5ks		NE	0.06	1.5	Fair	
Springfield, Massachusetts	30.19	766.8	30.32	770.1	56	13.3	81	NE	3	1.3		0	0			0	0	Clear	
Stockton, Texas	26.90	683.2	29.90	759.4	64	17.8	38	S	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.30	769.6	30.36	771.1	58	14.4	94	N	7	3.1		8k	0	SE		0	0	Cloudy	
Toledo, Ohio	29.35	745.5	30.00	762.0	72	22.2	71	E	6	2.7		0	1s		Calm	0	0	Clear.	
Tucson, Arizona	27.23	683.2	29.78	756.4	68	20.0	60	S	1	0.4		0	0			0	0	Clear	
Tybee Island, Georgia	29.92	760.0	29.94	760.5	78	25.6	91	NE	28	12.5			10s		NE	0.30	7.6	Threatening	
Umatilla, Oregon	29.98	761.5			46	7.8	40	SW	4	1.8		0	0			0	0	Clear	
Unalashka, Aleutian Islands					48	8.9	92	SW			2		10s		SW	0	0	Cloudy	
Uvalde, Texas	28.99	736.3	29.78	756.4	76	24.4	95	E	1	0.4			10s		E	0.06	1.5	Cloudy	
Vicksburg, Mississippi	29.74	755.4	29.99	761.7	75	23.9	81	Calm	0	0		0	0			0	0	Clear	
Virginia City, Montana	24.60	624.8	30.08	764.0	27	— 2.8	76	Calm	0	0		0	0			0.03	0.8	Clear.	
Visalia, California	29.58	751.3	29.94	760.5	57	13.9	70	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.13	765.3	30.24	768.1	65	18.3	89	NE	7	3.1			10ks		NE	0	0	Cloudy	
Wickenburg, Arizona					59	15.0	65	N			1	0	0			0	0	Clear	
Wilmington, N. Carolina	29.97	761.2	30.05	763.3	77	25.0	86	NE	8	3.6		0	5s		NE	0	0	Fair	
Winnemucca, Nevada	25.90	657.8	30.26	768.6	38	3.3	31	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Mass	30.24	768.1	30.29	769.4	66	18.9	78	E	6	2.7		Haze	0	Calm		0	0	Clear	
Yankton, Dakota	28.86	733.0	30.17	766.3	46	7.8	84	NW	14	6.3		2cs	0	SW		0.16	4.1	Fair	
Yuma, Arizona	29.69	754.1	29.84	757.9	75	23.9	76	Calm	0	0		2c	0	W		0	0	Fair	
Sub-Series.																			
St. Paul's Island, Alaska																			
York Factory, B. A.	29.63	752.6	29.68	753.9	36.5	2.5	100	NE	32	14.3			10n		NE	6.50	165.1	Raining	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.73	755.1	29.75	755.6	83	28.3	79	SW	7.2	3.2		8c	2ks	W	SE	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.89	759.2	29.91	759.7	81	27.2	86	SE	2.4	1.1		4cs	8ks.		SE	0	0		Robert Mason.
St. Thomas					85	29.4	83	Calm	0	0		2c	8ks	E		0.10	2.5	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	85	29.4	87	SE	11	4.9		5c	5ks	N	Var.	0	0		James Gall.
Navassa, W. I.	29.83	757.7	29.91	759.7	83	28.3		SE	15.8	7.1						0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	80	26.7	87	SE			3	3c	5k	E		0.010	0.25	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.28	642.1			65.0	18.3	82	Calm	0	0			10n			0.04	1.0		Thomas Herran

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,600 (?) ft., or [illegible] (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m., Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.: Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.: Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or [illegible] (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,1[illegible]0.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft.,or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.08	764.0	78	25.6	78	25.6	82	NE	14	6.3	.....	.....	1	.....	NE	0	0	.....	.....	Clear.	
NavyYard,Portsmouth,N.H	30.23‡	767.8‡	.....	.....	56	13.3	87	W	3	1.3	.....	.....	5?	.....	.....	0	0	.....	.....	Clear?.....	
Naval Hospital, Yokohama, Japan.....	30.02*	762.5*	76	24.4	75	23.9	96	Calm	.....	.....	0	.....	10ks;k	.....	SW	0.32	8.1	.....	.....	Cloudy.....	
Adams. S. 35° 33′, W. 167° 06′.....	30.50	774.7	63	17.2	55	12.8	87	NE	.....	.....	4	.....	10	.....	NE	0	0	Mod'ate	NE	Cloudy	
Alliance, Villafranca, France	29.91‡	759.7‡	.....	.....	80	26.7	66	Calm	.....	.....	0	.....	1	.....	Calm	.....	.....	None	.....	Hazy.....	
Ashuelot. Yokohama, Japan	30.10	764.5	78	25.6	76	24.4	95	S	.....	.....	1	.....	10	.....	S	.....	.....	Smooth	.....	Misty.....	
Alaska. S. 50° 17′, W. 74° 56′.....	29.04	737.6	52	14.4	48	8.9	47	NNE	.....	.....	5	.....	10	.....	SW	1.12	28.4	Smooth	.....	Raining.....	
Canonicus, New Orleans, La.....	30.00	762.0	58	14.4	79	26.1	91	NE	.....	.....	5	.....	3	.....	.....	.....	.....	.....	.....	Clear	
Colorado. New York, N. Y.....	30.30‡	769.6‡	.....	.....	64	17.8	83	ENE	6	2.7	.....	.....	8	.....	ENE	0	0	.....	.....	Hazy.....	
Constitution, Havre, France.....	30.09‡	764.3‡	.....	.....	65	18.3	94	W	.....	.....	3	.....	9	.....	E	.....	.....	.....	.....	Pleasant... ...	
Despatch, Constantinople, Turkey	29.88‡	758.9‡	.....	.....	74	23.3	68	NE	.....	.....	4	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.24	768.1	75	23.9	74	23.3	95	ENE	10	4.5	.....	.....	8	.....	NE	3.1	79.	.....	.....	Clearing.....	
Gettysburg Villafranca, France.....	29.83‡	757.7‡	.....	.....	88	31.1	88	SSE	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Guard. Bahia, Brazil.....	30.22	767.6	79	26.1	78	25.6	73	SE	....	.....	3	.....	5	.....	SE	.....	.....	.....	.....	Fair...	
Hartford, Rio de Janeiro, Brazil ...	30.31	769.9	.....	.....	71	21.7	75	Calm	0	0	.....	.....	8	.....	ENE	0.03	0.8	.....	.....	Cloudy	
Marion, Leghorn, Italy.....	29.96	761.0	78	25.6	80	26.7	74	N	.....	.....	3	.....	2	.....	Calm	0	0	.....	.....	Fair	
Michigan, Erie, Pa.....	29.93†	760.2†	.....	.....	71	21.7	75	SSE	.....	.....	6	.....	2	.....	SSE	.....	.....	Mod'ate	S	Fair.....	
Monocacy. Ura-no-go-ura, Japan.....	29.98‡	761.5‡	.....	.....	77	25.0	91	SSE	.....	.....	0-1	.....	8	.....	SSE	.....	.....	.....	.....	Raining.....	
New Hampshire, Port Royal, S. C.....	30.14†	765.5†	.....	.....	77	25.0	100	NE	25	11.2	.....	.....	8	.....	E	0.09	2.3	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.08†	764.0†	.....	.....	62	16.7	88	E	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.36	771.1	68	20.0	67	19.4	65	NE	.....	.....	2	.....	8	.....	NE	.....	.....	.....	.....	Cloud	
Palos, Tientsin, China.....	30.04	763.0	69	20.6	66	18.9	68	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Light haze ..	
Plymouth, New York, N. Y..... ...	30.37	771.4	64	17.8	61	16.1	94	ENE	.....	.....	3	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Ranger. Hong-Kong, China	29.94	760.5	82	27.8	82	27.8	87	SW	.....	.....	1-2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas.....	29.88	758.9	78	25.6	79	26.1	95	SE	.....	.....	1	.....	5	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md...	30.19‡	766.8‡	... .	.....	66	18.9	89	NE	.....	.....	1	.....	10	.....	NE	0	0	.....	.....	Cloudy.....	
Saratoga, Off Cape May, N. J.....	30.08*	764.0*	.....	.....	69	20.6	95	NE	.....	.....	4	.....	5	.....	Calm	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.16	766.1	67	19.4	63	17.2	94	NE	7	3.1	.....	.....	10	.....	Calm	0	0	.....	.....	Foggy	
Supply, Havre, France.....	30.19	766.8	67	19.4	66	18.9	84	NW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Swatara, Boston, Mass.....	30.33‡	770.4‡	.....	.....	56	13.3	94	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Dense fog....	
Trenton, Southampton, England.	30.03‡	762.7‡	.....	.....	70	21.1	61	NW	.....	.....	2	.....	5	.....	N;W	0	0	.....	.....	Cloudy.....	
Tuscarora. La Paz, Mexico.....	29.70	754.4	79	26.1	81	27.2	87	S	.....	.....	1	.....	2	.....	Calm	0	0	... ...	.....	Fair.....	
Vandalia. Villafranca, France.....	29.90‡	759.4‡	.....	.....	80	26.7	70	SSE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.32‡	770.1‡	.....	.....	58	14.4	82	NW	4	1.8	.....	.....	10	.....	Calm	0	0	.....	.....	Foggy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	Up'er 0–10.	Low'r 0–10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co)peration of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Esquimault, B. C.		30.49*	774.4*				Calm			0		Sm'e						Fair	Capt. Seabury.
S. S City of Peking, N. 36° 30′, E. 178° 05′		29.95†	760.7†	72	22.2	95	S	31	18.9			9		S		Small	S	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 24° 8′ W. 111° 30′		30.02†	762.5†	74	23.3	90	NW			3		4		Calm	0	Small	NW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.91†	759.7†	56	13.3	81	W			1		2		E	0			D. clouds	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; not any distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, Hong-Kong, China		29.70*	754.4*	82	27.8	93	N			5		ks		NE				D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 34° 40′, E. 139° 12′		29.89†	759.2†	79	26.1	100	Var.			2		n		N		Heavy			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 40° 21′, W. 61° 17′		30.26	768.6	73	22.8	87	ENE			4		2		ENE		3–4	ENE	Fair	Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.29*	769.4*	61	16.1	??	ENE			2		8		ENE	0			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		30.25?	768.3?	65	18.3	84	S			1		5		S				Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 43° 39′, W. 57° 39′		30.38*	771.6*				WNW	12	5.4			2		W		Smooth		Clear	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 33° 25′, W. 70° 30′		29.96	761.0	80	26.7	82	ENE	7	3.1			8ks		E	0.34 in or 8.6 mm.	Swell	NE	Squally	Capt. James Jorgensen.
Schooner Florence, Niantlic		30.37*	771.4*	86.8	2.7		NW			2.0	4ks	4ks	NW	SE	0			Cloudy	O. T. Sherman.

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

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

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

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

Albert J. Myer

Brig. Gen. (Bvt. Assgd.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 10, 1878.

7:35 A. M. WASHINGTON mean time.

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

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

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.08	763.9	70.3	21.3	83	NE			5		3			0	0	Pretty fair.	Dr. Ollive.
Nemours			29.94	760.4	78.6	25 9	80	N			5		5			0.015	0.38	Cloudy	Kosxuche.
Algiers			29.97	761.3	80.2	26.8	72	ENE			3		2			0	0	Fair	Tourillere.
La Calle			30.02	762.4	81.0	27.2	75	NW			5		3			0	0	Pretty fair.	Foufrede.
Tunis			30.00	761.9	78.3	25.7	59	W			2		0			0	0	Clear	Jacques.
Sfax			30.07	763.7	84.2	29.0		NW			1		0			0	0	Clear	Gan.
Saida			30.03	762.8	85.0	21.8	18	W			5		4			0.012	0.3	Cloudy	Herbin.
Tebessa			30.00	762.1	80.6	27.0	20	W			1		0			0	0	Clear	Watrin.
Geriville			30.04	762.9	84.9	29.4	36	NNW			9		8			0	0	Very cloudy	Brugnlaux.
Laghouat			30.08	764.0	92.5	33.6	26	SW			1		4			0	0	Cloudy	Bertrand.
Biskra			30.01	762.3	90.5	37.5	27	ESE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 8907 meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.37	746.0	29.89	759.3	76.0	24.8	68	NE			1		4			1.142	29.0	Raining	Prof. Ivan Stozu
Cracow, I. R. Observatory	29.24	742.7	29.97	761 2	72.3	22.4	66	NE			1		5			0	0		Dr. Wierzbiski
Eperies	29.08	738.6	29.92	760.0	72.7	22.6	60	N			2		8cs			0.16	4.0		Julius Mikolic.
Gratz	28.77	730.7	29.97	761.3	70.9	21.6	76	SW			2		8			0.409	10.40	Thunder-storm.	Andreas Rospini.
Hermannstadt	28.44	722.3	29.85	758.1	77.0	25.0	68	NE			2		2			0	0		Prof. A. Gottschling.
Kremsmünster	28.73	729.8	30.04	763.1	64.8	18.2	78	W			2		10			0.354	9.0		Prof. C. Wagner
Lemberg	28.95	735.3	29.90	759.5	69.8	21.0	65	NE			2		5			0	0		Dr. T. Stanecki.
Pola	29.82	757.4	29.93	760.2	72.3	22.4	77	Calm			0		10ks			0.744	18.9		I.R.Hydrographic Office
Szathmar	29.49	749.0	29.93	760.3	75.2	24.0	44	N			3		0			0	0		Julius Csics, S. J.
Szegedin	29.61	752.1	29.87	758.8	82.0	27.8	77	Calm			0		4			0.669	17.0		Karl Stancel.
Trieste	29.85	758.1	29.95	760.7	74.8	23.8	59	N			2		10			Inap.	Inap.	Raining	P. Busin.
Vienna	29.32	744.7	30.02	762.5	65.5	18.6	83	W			3		10			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.0 m., or 1,256.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.04	763.0	30.14	765.5	61.0	16.1	.....	SW	12	5.4	.....	.....	7	.....	.....	0	0	D. clouds.....	W. Boswell.
Ardrossan	30.17	766.3	30.19	766.8	61	16.1	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.22	767.6	62.9	17.2	.....	SSW	10	4.5	.....	.....	4	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.26	768.6	62.0	16.7	.....	WNW	7	3.1	.....	.....	2	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.85	758.2	30.25	768.3	64.0	17.8	.....	W	.....	.....	4	.....	4	.....	.....	0	0	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	83	28.3	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds..	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.22	767.6	66.0	18.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H.C.
Cardington	.....	.....	30.24	768.1	68.0	20.0	.....	E	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E.	30.08	764.0	30.21	767.3	65.2	18.4	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.78	729.7	30.18	766.6	65.0	18.3	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	Fine	Alexander Watt.
Donaghadee	30.16	766.1	30.19	766.8	63	17.2	.....	W	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	30.19	766.8	30.22	767.6	66	18.9	.....	WSW	.....	.....	2	.....	4	.....	.....	.....	.....	Hazy.....	J. Costello.
Eccles, (near Manchester)	.....	.....	30.23	767.8	64.8	18.2	.....	NW	1.4	0.6	.....	.....	3	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	30.03	762.7	30.26	768.6	66.0	18.9	.....	ESE	.....	.....	2	.....	7	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.43	696.7	29.74	755.4	84.0	28.9	.....	NE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	85	29.4	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	30.16	766.1	64	17.8	.....	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.88	758.9	29.93	760.2	.....	.....	.....	NE	.....	.....	4	.....	6	.....	.....	.....	.....	Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.97	761.2	30.17	766 3	61.0	16.1	.....	W	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	30.22	767.6	30.22	767.6	64	17.8	.....	NNE	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	30.05	763.3	30.22	767.6	65.8	18.8	.....	N	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	30.01	762.2	30.23	767.8	66	18.9	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.27	768.8	70	21.1	.....	E	.....	.....	1	.....	0	.....	.....	0	0	Very fine.....	M. P. Moyle.
Holyhead	30.21	767.3	30.26	768.6	62	16.7	.....	SSW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.97	761.2	30.26	768.6	68.4	20.2	.....	WSW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	J. Fisher.
Kew, Observatory	30.19	766.8	30.23	767.8	62.9	17.2	.....	NNW	6	2.7	.....	.....	8	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	30.24	768.1	30.27	768.8	62	16.7	.....	S	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	30.24	768.1	65.0	18.3	.....	SE	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.85	758.2	29.92	760.0	80.6	27.0	.....	NE	.....	.....	1	.....	4ck	.....	.....	.....	.....	D. clouds.....	Sergt. Beckett.
Nairn	30.04	763.0	30.11	764.8	56	13.3	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.75	755.6	81.5	27.5	.....	SE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	C. S. Duncombe.
Nottingham, Observatory	30.06	763.5	30.24	768.1	70.1	21.2	.....	SSE	.....	.....	2	.....	4c,k	.....	SSE	0	0	D. clouds.....	E. J. Löwe, F. R. S.
Oscott, St. Mary's College	29.72	754.9	30.23	767.8	66.1	18.9	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.14	765.5	64	17.8	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds.....	H.E. Bellamy.
Plymouth	30.16	766.1	30.23	767.8	67.7	19.8	.....	S	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	30.20	767.1	30.24	768.1	67	19.4	.....	SSE	.....	.....	2	.....	5	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	30.08	764.6	30.25	768.3	63	17.2	.....	SE	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.06	763.5	58	14.4	.....	SW	5	2.2	.....	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.82	757.4	84.8	29.3	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	29.98	761.5	30.25	768.3	67.8	19.9	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	Blue sky.....	W. F Cooper.
Silloth Rectory	30.19	766.8	30.22	767.6	67.9	19.8	58	NW	.....	.....	1	.....	3	.....	.....	0	0	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.84	757.9	30.25	768.3	62.6	17.0	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	30.02	762.5	30.24	768.1	67.0	19.4	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.07	763.8	60	15.6	.....	WSW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	30.14	765.5	72	22.2	.....	SE	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.22	767.6	64.5	18.1	.....	S	8	3.6	.....	.....	2	.....	.....	.....	.....	D. clouds.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.98	761.5	48.0	8.9	82	SE	.....	.....	1	.....	7k	.....	.....	0.31	7.9	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.13	765.4	72.9	22.7	59.4	SE	16.0	7.2	.....	0	2	.....	SE	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	52.3	11.3	80	S	4	1.8	.....	.....	10	.....	W	0.43	10.9	Dull	R. L. J. Ellery.
Monach L'thouse, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 31° 30', W. 24° 0'	3	NNW	Blue sky.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 38° 45', W. 72° 35'	4	ENE	D. clouds.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26.22	666.0	.....	.....	67.6	19.8	90	NE	.....	.....	1	3ck	.....	.....	.....	1.0	25.	.....	Mr. Ansart. Federico Maison.

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

DANISH SERIES.

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

Copenhagen	29.98	761.4	30.02	762.6	64.2	17.9	56	N	.....	.....	4	.....	1	.....	.....	.....	.....	.....	
Fanöe	30.10	764.5	30.12	765.0	63.7	17.6	62	NNW	.....	.....	4	.....	7	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.83	757.6	29.86	758.5	52.7	11.5	65	SW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	
Vestervig	29.88	758.9	30.05	763.2	61.9	16.6	73	NW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

FRENCH SERIES.

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

Alençon, Normal School	29.70	754.4	30.25	768.4	69.8	21	85	NE	.....	.....	3	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.90	759.5	29.98	761.5	77.5	25.3	45	N	.....	.....	6	.....	0	.....	.....	0	0	Very clear	M. Girard, Director.
Bar-sur-Seine	29.64	752.8	30.19	766.7	68.9	20.5	59	ENE	.....	.....	1	.....	5kn	.....	NE	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.94	760.5	30.22	767.5	71.1	21.7	66	NW	.....	.....	1	.....	8	.....	N	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.30	744.3	30.11	764.7	64.9	18.3	78	NNW	.....	.....	2	.....	2	.....	NE	0.004	0.1	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.70	754.4	30.24	768.2	67.6	19.8	64	N	.....	.....	1	.....	10kn	.....	N	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.96	760.9	30.20	767.1	67.6	19.8	87	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Light rain	The Staff.
Carcassonne, Normal School	29.56	750.8	29.95	760.8	80.6	27	42	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.50	749.4	30.05	763.3	73.8	23.2	74	N	.....	.....	2	.....	10	S	S	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.84	757.9	30.14	765.6	66.2	19.0	92	NW	.....	.....	1	.....	5	NW	NW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.79	731.3	30.12	765.0	67.6	19.8	62	N	.....	.....	1	.....	8	.....	E	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.37	746.1	30.24	768.1	63.5	17.5	80	NW	.....	.....	3	.....	5kn	.....	NW	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.86	733.0	30.00	762.0	81.5	27.5	20	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	M. Koss.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.02	762.5	30.23	767.8	67.3	19.6	75	N	.....	.....	1	.....	5	.....	N	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.93	760.2	30.23	767.9	69.8	21	65	N	.....	.....	3	.....	5	.....	N	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.29	743.9	30.20	767.0	61.9	16.6	46	NW	.....	.....	2	.....	5	.....	NW	0.181	4.60	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.17	766.3	30.21	767.2	68.4	20.2	98	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.16	740.6	30.19	766.7	64.4	18	80	N	.....	.....	1	.....	5k	.....	N	0.31	8.	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.83	757.7	30.04	763.1	87.1	30.6	63	N	.....	.....	6	.....	0	.....	.....	.....	.....	.....	Boyer, Director.
Privas, Normal School	29.02	737.2	30.06	763.4	73.4	23.	52	N	.....	.....	4	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.35	643.9	.....	.....	46.9	8.3	100	N	.....	.....	2	.....	.....	.....	.....	0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.21	767.0	30.25	767.8	74.7	23.7	61	N	.....	.....	2	.....	2	N	N	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.12	765.0	30.20	767.1	71.4	21.9	58	WNW	.....	.....	1	.....	2	.....	N	0.020	0.5	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.23	767.8	67.1	19.5	83	NW	.....	.....	1	.....	5	.....	NW	0.073	1.85	Cloudy	M. H. Hercouet.
Tarbes, Normal School	28.97	735.9	30.03	762.7	66.2	19	90	SW	.....	.....	4	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.87	758.6	29.89	759 3	81.0	27.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.71	18.	.....	L'Abbé Marchès.
Lyons	.....	.....	30.14	765.5	69.6	20.9	51	.....	.....	.....	.....	.....	1	.....	.....	0.012	0.3	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.91	759.8	79.9	26.6	33	NW	.....	.....	2-3	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	25.01	635.2	30.32	770.2	66.2	19.0	26	NNE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.95	760.6	77.0	25.0	69	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.1	30.20	767.5	67.3	19.6	70	W	.....	.....	1	.....	6	.....	NNE	0.01	0.8	.....	Marié Davy, Director
Perpignan	.....	.....	30.06	763.4	81.1	27.3	37	NE	18.6	8.33	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.74	577.5	.....	.....	54.3	12.4	.....	NE	.....	.....	2	.....	1	.....	.....	0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	30.04	763.1	30.21	767.3	69.3	20.7	70	NW	.....	.....	1	.....	8	.....	NNE	Inap.	Inap.	.....	E. Renou.
Toulouse, Observatory	29.47	748.4	30.19	766.9	73.8	23.2	39	NW	.....	.....	3	.....	0	.....	.....	0	0	.....	The Staff.
Tours	30.02	762.4	30.21	767.4	69.8	21.0	65	NE	.....	.....	1	.....	10	.....	N	0	0	.....	C. Marquet.
Versailles	.....	.....	30.22	767.5	70.5	21.4	54	NW	.....	.....	1	.....	5	.....	.....	0.002	0.04	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.96	761.0	29.99	761.7	62.6	17.0	90	NNW	5.4	2.4	.....	1c	.....	.....	.....	0.000	0.01	Clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.20	741.6	30.04	763.0	64.8	18.2	73	W			2		7	W		0.04	1.	Raining	Prof. Dr. Hoh.
Berlin	29.91	759.8	30.08	764.0	69.8	21.0	73	S			1		8			0.008	0.2		Prof. Arndt.
Breslau	29.54	750.2	30.07	763.7	70.7	21.5	54	NW			2		9			0	0		Royal University Obs'y
Carlsruhe	29.72	754.8	30.14	765.5	68.7	20.4	75	NE			1		5			0	0		Albert Senz.
Cassel	29.54	750.4	30.15	765.9	66.9	19.4	69	NW			4		2	NW		0	0		Dr. H. Möhl.
Crefeld	29.99	761.8	30.15	765.9	68.9	20.5	63	N			1		6k			0	0		Director Lose.
Emden	30.14	765.6	30.18	766.5	65.8	18.8	58	N			5		1			0	0		Prof. Prestel.
Frankfort on the Main	29.78	756.4	30.13	765.4	72.9	22.7		NNE			1		4			0.028	0.7		Physical Society.
Friedrichshafen	28.73	729.7	30.14	765.6	63.7	17.6	88	WSW			1		10	WSW		0.228	5.8	Light rain	M. Wilhelm.
Hamburg	30.04	762.9	30.10	764.6	67.1	19.5	70	NNW			5		3k			0.004	0.1	Showery	Captain F. Hegemann.
Kiel	30.09	764.2	30.10	764.6	64.9	18.3	68	NE			3		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.92	760.0	30.00	762.1	66.7	19.3	66	NW			3		4			0	0		Prof. E. Luther.
Köslin			29.98	761.6	68.9	20.5							4			0	0		H. Müller.
Leipsic, Observatory	29.70	754.4	30.12	765.0	60.8	16.0	95	NW			3		10	NW		0.083	2.1	Rainy	Prof. Bruhns.
Memel, Naval School	29.97	761.1	30.01	762.3	63.1	17.3	72	SW			1		2cs						Reinbrecht and Skalweit.
Neufahrwasser	30.02	762.4	30.03	762.8	65.8	18.8	71	NE			2		9			0	0		A. Lothes.
Posen	29.80	756.8	30.08	763.9	70.3	21.3	55	NW			2		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.64	752.8	30.17	766.4	70.3	21.3	69	E			2		8	N		0.018	0.46		Astronomical Observatory.
Stuttgart	29.20	741.7	30.12	765.1	66.6	19.2	74	N			1		10			0.008	0.2	Rainy	Prof. Schoder.
Treves, (Trier)	29.62	752.4	30.15	765.7	70.0	21.1	61	NW			2		2			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.62	726.9	30.09	764.2	60.8	10.0	100	N	2.5	1.1			10		NW	0.169	4.3	Rain and fog	Dr. Von Bebber.
Wustrow, Naval School	30.07	763.6	30.10	764.6	65.5	18.6	82	WNW			2		3			0	0		E. F. Schütz.
German Naval Series.																			

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

GREEK SERIES.

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

Athens	29.51	749.5	29.88	758.9	86.0	30.0		SW			2.0							Dusty	Dr. J. F. J. Schmidt.

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

INDIAN SERIES.

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

Kurrachee	29.66	753.4	29.71	754.6	86.7	30.4	72	SW	34?	15.2?			8		SW	0	0	D. clouds	
Deesa	29.33	744.9	29.80	756.3	86.9	30.5	77	Calm					8	W		0	0	D. clouds	
Bombay	29.80	757.0	29.84	758.0	81.7	27.6	86	W	11	4.9			10		WSW	0.44	11.2	Raining	
Poona	27.74	704.7	29.73	755.2	79.8	26.6	76	W					10		W	0	0	Overcast	
Lahore	28.92	734.5	29.64	752.7	96.7	35.9	45	Calm	0.4	0.2			0			0	0	Blue sky	
Belgaum	27.34	694.5	29.90	759.5	71.9	22.2	91	WSW	5	2.2			10	E	W	0	0	Overcast	
Roorkee	28.70	729.1	29.58	751.3	89.8	32.1	61	NW	1	0.5			3			0	0		
Agra	29.07	738.5	29.62	752.5	89.7	32.1	79	Calm					9		N	0	0		
Nagpur	28.68	728.4	29.71	754.6	82.9	28.3	72	NW	3.2	1.4			9			0.37	9.4	Thunder	
Lucknow																			
Allahabad	29.33	745.0	29.64	752.7	85.9	29.9	88	Calm	1.1	0.5			10		W	0	0	Overcast	
Patna	29.48	748.8	29.66	753.3	86.6	30.3	82	Calm	0.8	0.4			10			0	0	Overcast	
Hazaribagh	27.72	704.0	29.73	755.2	75.8	24.3	90	WNW	8.4	3.8			10			1.11	28.2	Thunder-storm	
Cuttack	29.64	752.7	29.72	754.8	85.6	29.8	74	S	2.0	0.9			2			0	0	D. clouds	
Calcutta (Alipore)	29.69	754.1	29.71	754.6	84.7	29.3	83	S	7	3.1			7	S		0	0	D. clouds	
Goalpara	29.29	744.0	29.68	753.9	78.4	25.8	93	Calm	2.4	1.0			9			1.18	30.0	D. clouds	
Chittagong	29.70	754.5	29.80	756.8	82.9	28.3	87	Calm	4.1	1.8			8			0	0	Overcast	
Sibsagar	29.35	745.4	29.68	753.9	80.1	26.7	89	WSW	1.4	0.6			10			0.87	22.1	Drizzling	
Jubbulpore	28.39	721.1	29.74	755.4	83.2	28.4	82	NW	4.5	2.0			10			0	0	Overcast	

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

ITALIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.57	751.0	29.96	761.0	76.3	24.5	55	E	2.5	1.1	.....	.....	9	.....	.....	0.075	1.9	.....	Prof. Giovanni Clodig.
Padua	29.86	758.4	29.97	761.1	72.9	22.7	75	N	6.3	2.8	.....	.....	9	ENE	.....	0.232	5.9	.....	Prof. Dott. Lorenzoni
Vicenza	29.80	756.8	29.98	761.5	70.3	21.3	78	N	0.7	0.3	.....	.....	5	E	.....	1.811	46.0	.....	Cont. Alm. Da Schio.
Bergamo	28.68	728.4	29.95	760.6	76.6	24.8	55	SW	.....	.....	1	.....	4	.....	.....	0.740	18.8	.....	Prof. Trionfini Carlo.
Milan	29.46	748.3	29.96	761.0	77.5	25.3	56	SW	.....	.....	2	.....	1	NE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.08	738.5	29.95	760.7	78.8	26.0	41	SW	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	29.73	755.1	29.94	760.5	79.5	26.4	38	SSW	.....	.....	4	.....	1	.....	.....	0.898	22.8	.....	Prof. D. C. Bruno.
Porto Maurizio	29.75	755.7	29.92	759.9	80.4	26.9	47	N	.....	.....	6	.....	1	E	.....	0.276	7.0	.....	Prof. G. M. Garibaldi.
Genoa	29.67	753.7	29.98	761.5	74.3	23.5	59	ESE	.....	.....	2	.....	9	.....	.....	0.150	3.8	.....	Prof. P. Pigorini.
Parma	29.64	752.9	29.89	759.2	77.9	25.5	51	N	.....	.....	4	.....	5	.....	.....	0.315	8 0	.....	Cav. F. Meucci
Florence	29.79	756.7	29.87	758.8	75 2	24.0	61	N	9.4	4.2	.....	.....	3	.....	.....	2.780	70.6	.....	Prof. P. Monte.
Leghorn	29.91	759.6	29.95	760 8	68.5	20.3	84	NW	.....	.....	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Pesaro	28.44	722.3	29.95	760.6	64.0	17.8	88	NE	.....	.....	1	.....	10	.....	.....	0.110	2.8	.....	Prof. P. Serpieri.
Urbino	29.71	754.7	29.88	759.0	73.9	23.3	61	E	16.8	7.5	.....	.....	10	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Rome	29.69	754.2	29.89	759.1	82.2	27.9	64	S	.....	.....	6	.....	6	SSE	.....	0	0	.....	Prof. L. Palmieri.
Naples, O. U.	29.62	752.3	29.86	758.5	78.1	25.6	57	SW	13.0	5.8	.....	.....	6	SW	.....	0.087	2.2	.....	Prof. C. De Giorgi
Lecce	29.71	754.5	29.89	759.2	79.9	26.6	41	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cagliari	29.03	737.3	29.92	759.9	82.0	27.8	69	SW	1.3	0.6	.....	.....	4	.....	.....	0	0	.....	Prof. F. D. Conti.
Cosenza	29.69	754.0	29.93	760.2	78.1	25.6	65	ENE	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Palermo	29.86	758.4	29.93	760.3	78.3	25.7	75	SE	1.8	0.8	.....	.....	4	W	.....	0.630	16.0	.....	Prof. V. Giuliano.
Syracuse																			
SUB-SERIES.																			
Naples, S. R.	29.36	745.7	29.91	759.8	79.2	26.2	71	WSW	3.8	1.7	.....	.....	8	SW	.....	0	0	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.65	753.1	29.85	758.2	75.0	23.9	90	E	0.9	0.4	.....	.....	les; ck	S	.....	0	0	Fair	
Tokei (Yeddo) Observatory	29.91	759.7	29.97	761.2	75.0	23.9	98	S	6.3	2.8	.....	.....	10n;s	.....	SW	2.360	59.94	Light rain	I. Arai, Director.
Tokei (Yeddo) University	29.86	758.4	29.95	760.7	75.2	24	100	S	8	3.6	.....	.....	10d	.....	.....	2.19	55.63	.....	Prof. P. V. Veeder

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Cuernavaca	.....	.....	.....	.....	65.0	18.3	74	N	.....	.....	4	3c	2ks	E	W	0	0	½ cloudy	P. Ceballos.
Guadalajara	25.04	636.0	29.97	761.2	61.7	16.5	88	.....	.....	.....	.....	0	9k	.....	NE	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	23.69	601.7	29.82	757.6	64.4	18.0	66	NNE	.....	.....	1	0	0	.....	.....	0	0	Foggy	F. Ortiz.
Leon	24.42	620.2	29.96	761.0	60.6	15.9	83	N	.....	.....	1	0	0	.....	.....	0	0	Clear	Prof. M. Leal.
Mexico	23.11	587.0	30.09	764.3	57.2	14.0	88	Calm	0	0	.....	1c	2sk	.....	.....	Inap.	Inap.	.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.5	16.4	81	NNW	.....	.....	1	0	1s	.....	.....	0	0	Clear	M. V. de Leon, M. E
Puebla	23.43	592.6	30.01	762.2	51.6	10.9	95	N	3.6	1.6	.....	1c	2cs	.....	.....	0.33	8.49	Clear	Prof. B. Gonzalez.
Tlacotalpam	29.84	757.9	29.85	758.2	78.8	26	96	NW	.....	.....	1	5c	9n	N	NW	Inap.	Inap.	Threatening	M, M. Cházaro.
San Luis Potosi	24.26	615.6	30.14	765.6	63.0	17.2	43	E	.....	.....	.....	4	3	W	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.89	759.2	29.92	759.9	80.6	27.0	77	NNW	2.2	1.0	.....	1ck	4ks	.....	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	50.0	10.0	81	NE	.....	.....	1	.....	.....	.....	E	.....	.....	Drizzling	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.0	49.3	9.6	85	NE	1.8	0.8	.....	2	0	Calm	.....	0.493	12.5	Almost clear	Prof. P. Spina, [M.M.D.D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.30	718.9	29.92	760.0	79.2	26.2	85	NE	0.8	0.4	.....	3	2	.....	NE	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.5 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.8 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.21	767.2	30.21	767.2	70.2	21.2	.....	NW	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.13	765.3	30.19	766.7	65.3	18.5	.....	N	.....	.....	2	.....	.....	.....	.....	0.024	0.6	.....	
Helder	30.17	766.2	30.17	766.2	64.4	18.0	.....	NNW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.14	765.6	30.14	765.6	71.8	22.1	84	NW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.14	765.6	30.19	766.8	70.3	21.3	66	NNW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.97	761.2	30.02	762.6	58.6	14.8	58	SW	11.0	4.9	.....	.....	3	.....	.....	0.157	4.0	.....	.....
Bróno	29.72	755.0	29.76	756.0	53.2	11.8	78	SW	25	11	.....	.....	8	.....	.....	0.150	3.8	.....	.....
Christiania	29.77	756.1	29.91	759.7	65.5	18.6	37	WNW	7	3	.....	.....	1	.....	.....	0.008	0.2	.....	.....
Tromsö	29.50	749.2	29.54	750.3	51.8	11.0	68	SW	9	4	.....	.....	2	.....	.....	0.165	4.2	.....	.....

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.91	759.6	30.09	764.3	72.7	22.6	86	S	3.8	1.7	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.7	29.98	761.5	82.0	27.8	44	ESE	5.6	2.5	.....	.....	5	SSW	.....	0.185	4.7	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.1	30.05	763.3	76.8	24.9	62	SW	1.8	0.8	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.63	752.6	29.98	761.4	79.5	26.4	55	NE	6.3	2.8	.....	.....	4	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.08	764.1	30.15	765.9	74.8	23.8	60	SE	14.3	6.4	.....	.....	5	.....	.....	0	0	.....	

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

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 38° 45', W. 22° 26'	.....	.....	30.17	766.3	73.8	23.2	.....	ENE	.....	.....	2	.....	10	.....	E	1	.....	Gloomy	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03', E. 12° 02'	.....	.....	29.98	761.5	71.6	22.0	.....	WSW	.....	.....	3	.....	6	.....	WSW	2	WSW	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	29.89	759.3	69.2	31.8	.....	NE	.....	.....	4	.....	1	.....	NE	3	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	29.92	759.9	78.8	26.0	.....	W	.....	.....	2	.....	3	.....	W	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.82	757.5	84.2	29.0	.....	NW	.....	.....	2	.....	5	.....	NW	1	.....	D. clouds	M. T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.59	751.5	30.00	761.9	67.1	19.5	65	NNW	2	1	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.60	751.8	30.01	762.3	61.3	16.3	55	Calm	0	0	.....	.....	1	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.76	755.9	30.00	761.9	63.0	17.2	50	WSW	4	2	.....	.....	4ck	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.92	760.0	29.94	760.4	59.7	15.4	85	WNW	7	3	.....	.....	5c	.....	.....	.....	.....	.....	Central Physical Obs.
Knopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.27	743.4	29.89	759.2	63.3	17.4	59	NE	4	2	.....	.....	7k;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.76	755.9	29.83	757.7	73.0	22.8	74	NNW	13	6	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kerich	29.84	758.0	29.86	758.5	78.4	25.8	74	NE	7	3	.....	.....	1	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.42	747.3	29.97	761.2	54.0	12.2	64	N	7	3	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.59	751.5	29.79	756 6	59.2	15.1	93	SE	2	1	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.80	756.9	29.82	757.4	52.1	11.1	87	NW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.50	724.0	29.86	758.4	75.0	23.9	54	E	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.00	762.0	29.92	759.9	74.1	23.4	36	SSE	7	3	.....	.....	6ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.22	742.3	29.69	754.2	50.2	10.1	100	WNW	4	2	.....	.....	10n	.....	.....	.....	.....	Light rain	Cand. Fatjanow.
Kasan	29.43	747.6	29.70	754.4	52.2	11.2	90	WSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.74	729.9	29.66	753.3	56.8	13.8	78	Calm	0	0	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.64	752.9	29.87	758.6	77.2	25.1	50	NNW	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	
Tashkend	28.46	722.9	30.10	764.6	74.8	23.8	89	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.41	747.1	29.91	759.6	74.7	23.7	35	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.99	761.8	30.28	769.2	52.7	11.5	66	E	4	2	.....	.....	0	.....	.....	.....	.....	Light clouds	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.74	755.4	29.88	759.0	69.3	20.7	54	WNW	4	2	.....	.....	1k	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 24'.

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.94	760.4	30.04	762.9	81.3	27.4	60	S	2.4	1.06	.....	2c	7k	W	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.10	764.4	30.15	765.8	76.3	24.6	54	N	1.5	0.68	.....	3	1	E	.....	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.19	690.7	.....	.....	70.3	21.3	71	NE	10.6	4.72	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.86	707.5	29.96	761.0	84.9	29.4	40	E	5.2	2.33	.....	1	2	SE	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	29.89	759.1	30.03	762.7	88.9	31.6	52	ENE	2.9	1.28	.....	1	6	WNW	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.12	739.6	29.98	761.4	78.1	25.6	58	ENE	10.7	4.80	.....	.....	1	.....	.....	0	0	Almost clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.57	751.0	29.63	752.6	79.2	26.2	85	SSW	15.2	6.8	.....	8c	1sk	NNW	.....	0.831	21.1	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.84	757.9	29.93	760.3	83.5	28.6	54	SE	28.6	12.8	.....	3	4	SE	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.84	758.0	29.93	760.3	84.2	29.0	83	SE	5.8	2.60	.....	6s	2k	SE	SE	0	0	Clear?	Leonardo de Tejeda, Ch'f Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.65	753.0	29.69	754.0	55.4	13.0	.....	W	.....	.....	4	.....	8	.....	.....	0.012	0.3	.....	
Umea	29.70	754.4	29.75	755.7	62.2	16.8	61	NW	.....	.....	2	.....	4	.....	.....	0	0	.....	
Hernosand	29.71	754.7	29.76	756.0	60.1	15.6	46	NW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Stockholm	29.67	753.5	29.84	758.0	64.4	18.0	87	SW	.....	.....	4	.....	7	.....	.....	0.008	0.2	.....	
Wisby	29.85	758.2	29.91	759.7	65.5	18.6	79	WNW	.....	.....	4	.....	7	.....	.....	0.020	0.5	.....	
Sub-Series.																			
Upsala	29.76	756.0	29.84	757.9	56.1	13.4	94	N	10.7	4.8	.....	.....	10	.....	N	0.267	6.78	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 5 p. m., local time, and apparently on the following day.

SWISS SERIES.

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

Geneva	28.69	728.6	30.07	763.7	70.0	21.1	66	NE	.....	.....	5	.....	1	.....	.....	0.012	0.3	Clear.	The Observatory.
Zurich	28.56	725.4	30.18	766.5	59.7	15.4	97	NW	.....	.....	1	.....	10	.....	.....	0.181	4.6	Raining.....	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm.; Thermometer, +2.1 cent.; Relative Humidity, +5 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	29.89	759.1	75.4	24.1	55	ENE	13	6.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.01	762.3	80.4	26.9	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.72	754.9	29.84	757.8	92.5	33.6	52	W	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.

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

CANADIAN SERIES.

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

Bathurst, N. B	30.10	764.5	30.18	766.6	63.9	17.7	93	Calm	0	0	.....	.....	9n	.....	.....	0	0	Cloudy.....	Hon. J. Ferguson.
Brockville, Ontario	29.73	755.1	30.02	762.5	72	22.2	.....	S	5	2.2	.....	2c	0	SW	.....	0	0	Clear.....	W. R. Rigg.
*Chatham, N. B	30.15	765.8	30.21	767.3	62	16.7	89	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island	30.21	767.3	30.25	768.3	64	17.8	74	SW	6	2.7	.....	.....	8ks	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.83	757.7	30.02	762.5	67.9	19.9	73	SW	.....	.....	3	1cs	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.18	766.6	61.5	16.4	98	SE	.....	.....	1	.....	.....	.....	.....	0	0	Misty.....	H. A. Johnson.
Esquimault, B. C	30.08	764.0	30.12	765.0	57.2	14.0	58	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	30.07	763.8	30.09	764.3	52	11.1	90	SW	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	J. McWilliams.
Fredericton, N. B	30.21	767.3	30.27	768.8	59.8	15.4	83	SW	4	1.8	.....	0	5s	.....	.....	0	0	Fair	Prof. Harrison.
*Fort Garry Manitoba	29.28	743.7	30.12	765.0	42	5.6	91	NW	18	8.0	.....	5k	5n	NW	NW	0.460	11.68	Cloudy.....	James Stewart.
Granton, Ontario	28.83	732.3	29.88	758.9	70	21.1	100	S	.....	.....	1	.....	10n	.....	.....	0	0	Overcast....	James Grant.
*Halifax, N. S	30.13	765.3	30.26	768.6	60	15.6	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.59	751.6	29.95	760.7	71.5	21.9	80	SW	.....	.....	4	10cs	0	SW	.....	0	0	Cloudy.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.35	770.9	30.37	771.4	54	12.2	83	SE	.....	.....	1	.....	10	.....	.....	0	0	Cloudy.....	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.04	763.0	67	19.4	88	SE	18	8.0	.....	2c	0	Calm	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.21	767.3	30.25	768.3	73.7	23.2	61	W	6	2.7	.....	0	0	.....	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	29.89	759.2	30.08	764.0	63	17.2	80	S	12	5.4	.....	2ck	5ks	SW	SW	0	0	Fair.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.19	741.4	29.85	758.2	70	21.1	85	S	14	6.3	.....	2cs	2ks	SW	SW	0	0	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.23	742.4	29.95	760.7	66.7	19.3	87	SW	.....	.....	1	0	7ks	.....	.....	0	0	Fine.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.94	760.5	71	21.7	90	S	15	6.7	.....	10k	0	SW	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.22	767.6	30.27	768.8	62.4	16.9	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.31	744.5	29.92	760.0	72	22.2	85	W	8	3.6	.....	5k	2s	SW	SW	0	0	Cloudy.....	M. Payne.
*Quebec, Quebec	29.83	757.7	30.14	765.5	62	16.7	51	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.47	748.5	29.91	759.7	64	17.8	89	SE	10	4.5	.....	.....	8s	.....	SE	0	0	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	30.23	767.8	30.28	769.1	55	12.8	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Dr. Gove.
St. John, N. B	30.13	765.3	30.30	769.6	57	13.9	94	S	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.14	740.1	29.81	757.2	71	21.7	79	S	14	6.3	.....	.....	10ks	.....	SW	0	0	Cloudy.....	K. Stewart.
Stayner, Ontario	29.10	739.1	29.84	757.9	74	23.3	81	SE	13	5.8	.....	8k	0	SW	.....	0	0	Cloudy.....	R. J. Cole.
Stratford, Ontario	28.66	728.0	29.89	759.2	68.8	20.4	94	SW	16	4.5	.....	1cs	6ks;cs	.....	.....	0	0	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.25	768.3	30.28	769.1	70	21.1	73	S	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	T. C. Hill.
*Toronto, Ontario	29.57	751.1	29.94	760.5	71	21.7	86	S	7	3.1	.....	.....	10ks	.....	S	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	51.0	10.6	92	NE	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy.....	John Delany.

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

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

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

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0–10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.94	760.5	30.16	766.1	60	15.6	88	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Alpena, Michigan	29.27	743.4	29.89	759.2	59	15.0	94	W	8	3.6	.....	.....	10n	.....	Calm	1.26	32.0	Light rain	
Atlantic City, New Jersey	30.07	763.8	30.09	764.3	70	21.1	100	NE	24	10.7	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Augusta, Georgia	29.80	756.9	29.98	761.5	71	21.7	80	NE	6	2.7	.....	1ch;hz	0	NE	.....	0.01	0.3	Clear	
Baltimore, Maryland	30.05	763.3	30.10	764.5	67	19.4	89	N	5	2.2	.....	10k	Sm'e	SW	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.09	764.3	30.12	765.0	68	20.0	95	NE	20	8.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Bismarck, Dakota	28.50	723.9	30.36	771.1	34	1.1	90	W	1	0.4	.....	2cs	0	NW	.....	0	0	Clear	
Boerne, Texas	28.67	728.2	.....	.....	62	16.7	83	N	18	8.0	.....	.....	10s	.....	N	0	0	Cloudy	
Boise City, Idaho	27.48	698.0	30.44	773.2	43	6.1	66	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.08	764.0	30.24	768.1	63.5	17.5	92	NE	6	2.7	.....	10k	Fog	S	E	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.98	736.1	29.98	761.5	73	22.8	46	N	6	2.7	.....	.....	10s	.....	Calm	0.27	6.9	Threatening	
Breckenridge, Minnesota	29.20	741.7	30.24	768.1	35	1.7	100	W	8	3.6	.....	8k	0	NW	.....	0	0	Cloudy	
Brownsville, Texas	29.89	759.2	29.95	760.7	76	24.4	95	N	.....	.....	1	8k	0	N	.....	0	0	Fair	
Buffalo, New York	29.28	743.7	29.95	760.7	71	21.7	71	S	8	3.6	.....	2k	2ks	SW	SW	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	78	25.6	50	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.91	759 7	30.17	766.3	64	17.8	72	S	8	3.6	.....	1c	0	N	.....	0	0	Clear	
Cairo, Illinois	29.65	753.1	30.03	762.7	61	16.1	94	N	16	7.2	.....	.....	10n	.....	N	1.44	36.6	Light rain	
Camp Apache, Arizona	.....	.....	.....	.....	53	11.7	66	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.27	641 8	30.07	763 8	60	15.6	39	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.89	683.0	30.38	771.6	60	15.6	44	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Campo, California	27.44	697.0	30.01	762.2	48	8.9	77	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.94	760.5	29.95	760.7	79	26.1	82	E	16	7.2	.....	2k	0	E	.....	0	0	Fair	
Cape Henry, Virginia	29.97	761.2	30.00	762.0	74	23.3	95	NE	21	9.4	.....	.....	10n	.....	NE	0.12	3.0	Light rain	
Cape Lookout, N. Carolina	29.88	758.9	29.90	759.4	80	26.7	82	E	20	8.9	.....	8ck	0	E	.....	0.05	1.3	Cloudy	
Cape May, New Jersey	30.05	763.3	30.08	764.0	70	21.1	95	NE	16	7.2	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Castroville, Texas	29.29	744.0	29.97	761.2	65	18.3	84	N	16	7.2	.....	.....	10n	.....	N	0.80	20.3	Light rain	
Charleston, South Carolina	29.88	758.9	29.94	760.5	73	22.8	85	NE	17	7.6	.....	0	2s	.....	NE	0.49	12.4	Fair	
Cheyenne, Wyoming	24.31	617.5	30.25	768.3	29	— 1.7	78	NW	4	1.8	.....	0	5s	.....	Calm	Inap.	Inap.	Fair	
Chicago, Illinois	29.37	746.0	30.06	763.5	55	12.8	74	NW	8	3.6	.....	2cs	0	NW	.....	0.23	5.8	Clear	
Cincinnati Ohio	29.31	744.5	29.93	760.2	73	22.8	74	SE	4	1.8	.....	.....	10ks	.....	W	0	0	Threatening	
Cleveland, Ohio	29.22	742.2	29.91	759.7	70	21.1	75	SE	12	5.4	.....	5k	0	SW	.....	0.05	1.3	Fair	
Coleman City, Texas	28.38	720.6	30.05	763.3	57	13.9	81	N	26	11.6	.....	.....	10s	.....	N	1.14	29.0	Cloudy	
Columbus, Ohio	29.12	739.6	29.91	759.7	76	24.4	72	S	3	1.3	.....	5k	Fog	Calm	Calm	0	0	Fair	
Conoco, Texas	28.28	718.3	29.95	760.7	57	13.9	57	NE	12	5.4	.....	10k	0	NE	.....	0.10	2.5	Cloudy	
Corsicana, Texas	29.63	752.6	30.09	764.3	64	17.8	89	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Davenport, Iowa	29.56	750.8	30.20	767.1	51	10.6	79	Calm	0	0	.....	1cs	0	Calm	.....	0	0	Clear	
Decatur, Texas	29.03	737.3	30.20	767.1	59	15.0	48	N	15	5.8	.....	.....	10s	.....	N	0.15	3.8	Cloudy	
Denison, Texas	29.34	745.2	30.13	765.3	61	16.1	71	N	10	4.5	.....	0	5s	.....	N	0.50	12.7	Fair	
Denver, Colorado	25.19	637.5	30.32	770.1	36	2.2	90	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.35	745.5	30.23	767.8	60?	15.6?	60	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.24	742.7	29.87	758.7	70	21.1	90	Calm	0	0	.....	.....	10n	.....	SW	0.07	1.8	Heavy rain	
Dodge City, Kansas	27.75	704.8	30.14	765.5	40	4.4	91	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.46	748.3	30.17	766.3	49	9.4	71	N	2	0.9	.....	0	Fog	.....	Calm	Inap.	Inap.	Clear	
Duluth, Minnesota	29.34	745.2	30.03	762.7	45	7.2	76	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.29	744.0	30.02	762.5	68	20.0	100	N	4	1.8	.....	.....	10n	.....	Calm	1.50	38.1	Light rain	
Eastport, Maine	30.22	767.6	30.28	769.1	58	14.4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	78	25.6	95	N	.....	.....	4	.....	8s	.....	N	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	70	21.1	76	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.25	742.9	29.93	760.2	72	22.2	71	S	17	7.6	.....	8ck	0	SW	.....	0	0	Cloudy	
Escanaba, Michigan	29.37	746.0	30.02	762.5	51	10.6	72	N	7	3.1	.....	0	0	.....	.....	0.04	1.0	Clear	
Florence, Arizona	28.48	723.4	30.08	764.0	62	16.7	83	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.73	653.5	29.79	756.7	55	12.8	68	NE	14	6.3	.....	5c	0	NE	.....	0	0	Fair	
Fort Davis, Texas	25.44	646.2	30.40	772.1	55	12.8	79	NE	9	4.0	.....	.....	10n	.....	NE	0.02	0.5	Light rain	
Fort Gibson, Indian Ter	29.64	752.8	30.18	766.6	60	15.6	75	W	8	3.6	.....	5ck	2s	W	W	0.75	19.1	Fair	
Fort Griffin, Texas	28.96	735.6	30.24	768.1	58	14.4	70	N	8	3.6	.....	.....	10s	.....	N	0	0	Cloudy	
Fort McKavett, Texas	27.95	709.9	29.87	758.7	57	13.9	81	NE	12	5.4	.....	.....	10s	.....	NE	1.46	37.1	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.02	737.1	30.14	765.5	53	11.7	86	N	16	7.2	.....	0	2s	.....	N	0	0	Fair	
Fredericksburg, Texas	28.39	721.1	29.94	760.5	62	16.7	83	N	10	4.5	.....	.....	10s	.....	Calm	0.16	4.1	Cloudy	
Galveston, Texas	29.89	759.2	29.93	760.2	77	25.0	86	N	18	8.0	.....	.....	10ks	.....	N	0	0	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.35	745.5	29.98	761.5	63	17.2	72	NW	17	7.6	.....	.....	10s	.....	NW	0.26	6.6	Cloudy	
Indianapolis, Indiana	29.24	742.7	29.93	760.7	64	17.8	89	NW	9	4.0	.....	.....	10n	.....	NW	1.18	30.0	Light rain	
Indianola, Texas	29.96	761.0	29.98	761.5	78	25.6	86	N	28	12.5	.....	2k	0	N	.....	0.11	2.8	Fair	
Jacksboro, Texas	29.05	737.9	30.19	766.8	58	14.4	76	N	10	4.5	.....	.....	10s	.....	Calm	0.85	21.6	Cloudy	
Jacksonville, Florida	29.69	754.1	29.72	754.9	75	23.9	86	NE	8	3.6	.....	.....	10s	.....	NE	1.77	45.0	Cloudy	
Keokuk, Iowa	29.56	750.8	30.18	766.6	55	12.8	74	N	6	2.7	.....	2k	4s	N	N	0	0	Fair	
Key West, Florida	29.45	748.0	29.49	749.0	78	25.6	91	W	45	20.1	.....	.....	10n	.....	W	2.11	53.6	Light rain	
Kittyhawk, North Carolina	29.93	760.2	29.95	760.7	77	25.0	100	NE	19	8.5	.....	2k	8s	NE	NE	0.03	0.8	Cloudy	
Knoxville, Tennessee	29.03	737.3	29.99	761.7	72	22.2	89	Calm	0	0	.....	2ck	0	W	.....	0	0	Clear	
La Crosse, Wisconsin	29.40	746.7	30.12	765.0	58	14.4	53	W	3	1.3	.....	0	0	.....	.....	0.01	0.3	Clear	
La Mesilla, New Mexico	26.22	666.0	30.38	771.6	60	15.6	65	NE	1	0.4	.....	2k	0	Calm	.....	0	0	Clear	
Laredo, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lead City, Dakota	25.10	637.5	30.37	771.4	33	0.6	89	W	4	1.8	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy	
Leavenworth, Kansas	29.41	747.0	30.27	768.8	48	8.9	85	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.56	751.3	29.90	759.4	69	20.6	43	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.44	747.8	29.97	761.2	72	22.2	80	NW	8	3.6	.....	.....	10s	.....	W	Inap.	Inap.	Threatening	
Lynchburg, Virginia	29.43	747.5	30.08	764.0	72	22.2	67	Calm	0	0	.....	0	0	.....	.....	0.05	1.3	Clear	
Marquette, Michigan	29.25	742.9	29.94	760.5	57	13.9	58	S	4	1.8	.....	0	0	.....	.....	0.04	1.0	Clear	
Mason, Texas	28.56	723.9	30.25	768.3	60	15.6	82	N	14	6.3	.....	.....	10s	.....	N	0.21	5.3	Cloudy	
Memphis, Tennessee	29.49	754.1	30.00	762.0	69	20.6	95	N	13	5.8	.....	.....	10n	.....	Calm	0.95	24.1	Light rain	
Milwaukee, Wisconsin	29.34	745.2	30.07	763.8	52	11.1	73	NW	14	6.3	.....	1ck	0	W	.....	0.41	10.4	Clear	
Mobile, Alabama	29.84	757.9	29.88	758.9	74	23.3	86	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.68	753.9	29.91	759.7	77	25.0	69	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.98	736.1	29.99	761.7	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	24.07	611.4	30.43	772.9	48	8.9	27	SW	13	5.8	.....	0	5ks	.....	SW	0	0	Clear	
Nashville, Tennessee	29.48	748.8	29.99	761.7	72	22.2	80	W	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	
New Haven, Connecticut	30.08	764.0	30.19	766.8	64	17.8	83	NE	9	4.0	.....	0	5s	.....	E	0	0	Fair	
New London, Connecticut	30.15	765.8	30.20	767.1	66	18.9	79	N	4	1.8	.....	Haze	1s	Calm	E	0	0	Clear	
New Orleans, Louisiana	29.89	759.2	29.86	758.4	81	27.2	70	N	10	4.5	.....	Haze	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	30.15	765.8	30.20	767 1	66	18.9	84	NE	4	1.8	.....	7k	0	NE	.....	0	0	Fair	
New York, New York	30.09	762.0	30.18	766.6	66	18.9	90	NE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	29.96	761.0	30.01	762.2	73	22.8	95	NE	10	4.5	.....	.....	10n	.....	NE	0.91	0.3	Light rain	
North Platte, Nebraska	27.44	697.0	30.15	765.8	33	0.6	89	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.09	764.3	30.14	765.3	46	7.8	92	E	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	29.18	741.2	30.28	769.1	46	7.8	77	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.74	755.4	30.05	763.3	66	18.9	74	S	12	5.4	.....	1c	0	Calm	.....	0	0	Clear	
Pembina, Dakota	29.26	743.2	30.11	764.8	40	4.4	100	NW	14	6.3	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.10	764.5	30.15	765.8	66	18.9	89	NE	14	6.3	.....	.....	10s;fg	.....	NE;Calm	0	0	Cloudy	
Phœnix, Arizona	28.78	731.0	.....	.....	66	18.9	59	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.91	454.7	30.12	765.0	13	—10.6	62	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.31	617.5	30.08	764.0	44	6.7	23	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	29.98	761.5	70	21.1	75	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Port Huron, Michigan	29.23	742.4	29.86	758.4	70	21.1	90	SW	10	4.5	.....	.....	10n	.....	SW	Inap	Inap.	Light rain	
Portland, Maine	30.20	767.1	30.25	768.3	61	16.1	94	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Portland, Oregon	30.04	763.0	30.14	765.5	63	17.2	33	NE	5	2.2	.....	.....	Sm'e	.....	Calm	0	0	Smoky	
Prescott, Arizona	24.92	633.0	30.28	769.1	42	5.6	42	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.38	746.2	30.19	766.8	65	18.3	58	NW	16	7.2	.....	2ck	5s	N	NW	1.04	26.4	Cloudy	
Punta Rassa, Florida	29.18	741.2	29.20	741.7	79	26.1	87	W	10	4.5	.....	.....	10s	.....	W	0.15	3.8	Cloudy	
Red Bluff, California	29.65	753.1	30.00	762.0	65	18.3	31	N	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.80	756.6	30.01	762.2	78	25.6	86	NW	4	1.8	.....	.....	8s	.....	NW	0	0	Cloudy	
Rochester, New York	29.39	746.5	29.97	761.2	71	21.7	71	SW	5	2.2	.....	2c	0	SE	.....	0	0	Fair	
Roseburg, Oregon	29.52	749.8	30.10	764.5	47	8.3	74	Calm	0	0	.....	5cs	Sm'e	Calm	Calm	0	0	Fair	
Sacramento, California	29.88	758.9	29.96	761.0	60	15.6	60	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.55	750.6	30.12	765.0	58	14.4	58	NW	17	7.6	.....	0	5s	.....	Calm	0.83	21.1	Fair	
St. Marks, Florida	29.72	754.9	29.74	755.4	76	24.4	91	N	12	5.4	.....	0	0	.....	.....	0.34	8.6	Clear	
St. Paul, Minnesota	29.28	743.7	30.12	765.0	44	6.7	75	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.95	659.1	30.28	769.1	43.5	6.4	33	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.40	746.7	29.97	761.2	69	20.6	80	N	4	1.8	.....	.....	10n	.....	NE	0.02	0.5	Light rain	
San Diego, California	29.86	758.4	29.93	760.2	63	17.2	83	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.27	743.4	29.91	759.7	72	22.2	80	S	12	5.4	.....	.....	10ks	.....	SW	0	0	Cloudy	
Sandy Hook, New Jersey	30.12	765.0	30.15	765.8	66	18.9	95	E	20	8.9	.....	.....	10s	.....	E	0	0	Cloudy	
San Francisco, California	29.93	760.2	30.00	762.0	54	12.2	93	SW	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Santa Fé, New Mexico	23.49	596.6	30.03	762.7	43	6.1	51	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.79	756.7	29.88	758.9	75	23.9	86	NE	16	7.2	.....	2c	8ks	Calm	NE	0.16	4.1	Cloudy	
Shreveport, Louisiana	29.78	756.4	29.99	761.7	74	23.3	95	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.43	620.5	.....	.....	52	11.1	86	Calm	0	0	.....	.....	10s	.....	N	0.50	12.7	Cloudy	
Smithville, North Carolina	29.91	759.7	29.95	760.7	72	22.2	90	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.09	764.3	30.22	767.6	62	16.7	83	NE	3	1.3	.....	.....	10s	.....	N	0	0	Cloudy	
Stockton, Texas	27.19	690.6	30.19	766.8	55	12.8	80	NE	16	7.2	.....	.....	10s	.....	NE	0	0	Cloudy	
Thatcher's Island, Mass	30.19	766.8	30.24	768.1	63	17.2	94	E	3	1.3	.....	.....	10s	.....	NE	0	0	Threatening	
Toledo, Ohio	29.23	742.4	29.88	758.9	70	21.1	99	SE	6	2.7	.....	0	8s	.....	SE	0	0	Cloudy	
Tucson, Arizona	27.21	691.1	29.76	755.9	69	20.6	64	S	2	0.9	.....	.....	10n	.....	S	0.07	1.8	Heavy rain	
Tybee Island, Georgia	29.84	757.9	29.87	758.7	76	24.4	91	NE	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.92	760.0	.....	.....	42	5.6	50	SE	4	1.8	.....	.....	10s	.....	E	0.27	6.9	Threatening	
Unalashka, Aleutian Islands	.....	.....	.....	.....	44	6.7	84	SW	.....	.....	2	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.18	741.2	29.98	761.5	66	18.9	79	N	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	77	25.0	86	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Virginia City, Montana	24.62	625.3	30.10	764.5	37	2.8	63	SE	6	2.7	.....	5k	0	N	.....	0	0	Fair	
Visalia, California	29.63	752.6	29.99	761.7	64	17.8	47	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.00	762.0	30.11	764.8	68	20.0	84	NE	6	2.7	.....	0	0	.....	.....	6	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	54	12.2	49	NE	.....	.....	1	2c	8s	Calm	Calm	0	0	Cloudy	
Wilmington, N. Carolina	29.87	758.7	29.94	760.5	70	21.1	95	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.90	657.8	30.26	768.6	34	1.1	34	NE	9	4.0	.....	.....	10s	.....	N	0.12	3.0	Cloudy	
Wood's Holl, Mass	30.15	765.8	30.20	767.1	67	19.4	94	SE	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Yankton, Dakota	29.05	737.9	30.39	771.9	40	4.4	82	NW	6	2.7	.....	.....	10ks	.....	SE	0	0	Threatening	
Yuma, Arizona	29.75	755.6	29.90	759.4	81	27.2	47	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Aldska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.70	754.4	29.76	755.9	34.5	1.4	100	NE	26	11.6	.....	8ks	6s	N	N	1.50	38.1	Rain & snow	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.64	752.8	29.66	753.4	81	27.2	82	SW	10.8	4.8	.....	8c	2n	NW	NW	0.86	21.8	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.84	757.9	29.86	758.4	82	27.8	87	SE	8.4	3.8	.....	4cs	8ks	.....	S	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	83	E	3	1.3	.....	2c	4ks	NE	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.05	763.3	30.06	763.5	81	27.2	91	S	9	4.0	.....	.....	10n	.....	Calm	.....	.....	Raining	James Gall.
Navassa, W. I	29.81	757.2	29.89	759.2	83	28.3	.....	SE	14.2	6.3	.....	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762.2	30.01	762.2	83	28.3	79	SE	.....	.....	3	8c	5k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	69.0	20.6	78	Calm	0	0	.....	4cs;k	0	.....	.....	0	0	.....	Thomas Herran
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10s	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 4,569 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.. Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.0 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	29.98	761.5	79	26.1	79	26.1	82	NE	18	8.0	.....	.....	1	.....	NE	0	0	.....	.....	Clear	
NavyYard,Portsmouth,N.H	30.19‡	766.8‡	.....	.....	67	19.4	89	NE	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.97*	761.2*	76.3	24.6	76	24.4	98	Calm	.....	.....	0	.....	10n	.....	SW	3.31	84.1	.....	.....	Light rain	
Adams. S. 38° 02', W. 166° 38'	30.64	778.2	61	16.1	53	11.7	86	ENE	.....	.....	4	.....	2?	.....	ENE	0	0	Mod'ate	NE	Cloudy?	
Alliance, Villafranca, France	29.93‡	760.2‡	.....	.....	78	25.6	65	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Light	S	Hazy	
Ashuelot. Yokohama, Japan	30.04	763.0	76	24.4	76	24.4	95	SW	.....	.....	1	.....	10	.....	SW	.....	.....	Smooth	.....	Cloudy	
Alaska. Molyneux Sound	29.30	744.2	60	15.6	44	6.7	84	ESE	.....	.....	3	.....	10	.....	W	0.12	3.0	Smooth	.....	Drizzling	
Canonicus, New Orleans, La.	29.90	759.4	57	13.9	83	28.3	91	NE	.....	.....	7	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Colorado. New York, N. Y.	30.16‡	766.1‡	.....	.....	66	18.9	89	ENE	13	5.8	.....	.....	10	.....	ENE	0	0	.....	.....	Misty	
Constitution, Havre, France	30.19‡	766.8‡	.....	.....	67	19.4	89	N	.....	.....	2	.....	4	.....	N	.....	.....	.....	.....	Pleasant	
Despatch, Constantinople, Turkey	29.89‡	759.2‡	.....	.....	79	26.1	58	NE	.....	.....	3	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.13	765.3	75	23.9	75	23.9	95	NE	7.4	3.3	.....	.....	10	.....	NE	0.1	3.	.....	.....	Drizzling	
Gettysburg Villafranca, France	29.87‡	758.7‡	.....	.....	82	27.8	87	SE	.....	.....	2	.....	2	.....	Calm	0	0	.. ..	.....	Clear	
Guard. Bahia, Brazil	30.22	767.6	78	25.6	78	25.6	65	ESE	.....	.....	4	.....	2	.....	ESE	.....	.....	.....	.....	Clear	
Hartford, Rio de Janeiro, Brazil	30.24	768.1	.....	.....	71	21.7	75	NNW	3.6	1.6	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Marion. Leghorn, Italy	29.90	759.4	76	24.4	77	25.0	61	NE	.....	.....	2	.....	0	.....	.....	Heavy	Heavy	.....	.....	Clear	
Michigan, Put-in-Bay, Ohio	29.83†	757.7†	.....	.....	73	22.8	90	ESE	.....	.....	1	.....	10	.....	ESE	.....	.....	.....	.....	Light rain	
Monocacy. Ura-no-go-ura, Japan	29.96‡	761.0‡	.....	.....	77	25.0	95	S	.....	.....	1–3	.....	10	.....	S	.....	.....	.....	.....	Raining	
New Hampshire, Port Royal, S. C.	30.08†	764.0†	.....	.....	84	28.9	83	NE	24	10.7	.....	.....	8	.....	NE	0.011	0.28	.....	.....	Cloudy	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	62	16.7	83	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.23	767.8	66	18.9	66	18.9	100	NE	.....	.....	2	.....	8	.....	W	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China	30.00	762.0	70	21.1	66	18.9	68	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, New York, N. Y.	30.27	768.8	65	18.3	68	20.0	90	ENE	.....	.....	1–2	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
Ranger, Hong-Kong, China	29.94	760.5	85	29.4	82	27.8	67	ENE	.....	.....	4	.....	5	.....	Calm	.....	.....	.....	.....	Fair	
Rio Bravo, Brownsville, Texas	29.89	759.2	78	25.6	78	25 6	95	NW	.....	.....	2	.....	5	.....	N	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.08‡	764.0‡	.....	.....	69	20.6	95	NE	.....	.....	3	.....	10	.....	NE	0	0	.....	.....	Light fog	
Saratoga, Delaware River	30.07*	763.8*	.....	.....	70	21.1	95	N	.....	.....	3	.....	5	.....	SW	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa	30.05	763.3	70	21.1	68	20.0	90	NE	6	2.7	.....	.....	10	.....	NE	0	0	.....	.....	Foggy	
Supply, Havre, France	30.28	769.1	69	20.6	69	20.6	75	NE	.....	.....	1	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass.	30.22‡	767.6‡	.....	.....	65	18.3	94	ENE	.....	.....	1	.....	10	.....	SSE	.....	.....	.....	.....	Clearing	
Trenton, Southampton, England.	30.18‡	766.6‡	.....	.....	74	23.3	43	N	.....	.....	3	.....	0	.....	.....	0.6	15.	.....	.....	Clear	
Tuscarora, La Paz, Mexico	29.70	754.4	78	25.6	78	25.6	78	S	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Fair	
Vandalia, Villafranca, France	29.93‡	760.2‡	.....	.....	78	25.6	73	S	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.22‡	767.6‡	.....	.....	62	16.7	94	NE	4	1.8	.....	.....	10	.....	Calm	0	0	.....	.....	Cloudy	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Esquimault, B. C.																			Capt. Cobb.
S. S City of Peking, N. 36° 47′, W. 175° 23′		30.25*	763.3*				N			2		Sm'e						Fair	Capt. Seabury.
S. S. City of Sydney		29.81†	757.2†	72	22.2	95	WNW	35	15.6			10		S	Heavy	Small	S	Raining	Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 27° 8′ W. 114° 17′		29.89†	759.2†	68	20.0	95	WNW			4		10		NW	0			Foggy	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, San Francisco, Cal.		30.00†	762.0†	56	13.3	81	Calm			0		0			0			Foggy	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, N. 22° 20′, E. 114° 50′		29.67*	753.6*	78	25.6	86	NNE			5		ks		NE		Mod'ate	NE	Raining	Capt. L. Myer.
S. S. Gaelic, N. 42° 46′, E. 135° 22′		29.82†	757.4†	84	28.9	91	SE			4		ks		SE	Heavy	Swell	S	Raining	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 41° 54′, W. 56° 37′		30.34	770.6	69.5	20.8	61	ENE			3		2		ENE		1	ENE	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.16*	766.1*	69	20.6	??	ESE			2		8		E	0			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		30.22	767.6	71	21.7	85	S			2		3		S				Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Rondle.
S. S. Switzerland, N. 42° 12′, W. 63° 36′		30.33*	770.4*				ESE	9	4.0			0				Slight	SE	Clear	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 47′, W. 70° 36′		29.91	759.7	82	27.8	75	E	15	6.7			8ks		E	0.12 in or 3.0 mm.	Swell	NE	Squally	Capt. James Jorgensen.
Schooner Florence, Niantlic		29.98*	761.5*	34.2	1.2		Calm			0		10s						Snowing	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 11, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.05	763.9	71.1	21.7	85	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	29.95	760.7	79.0	26.1	92	NNW	.....	.....	5	.....	1	.....	.....	0.001	0.02	Very fair	Kesxuche.
Algiers	.....	.....	29.96	760.9	80.2	26.8	75	NE	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	Touriliere.
La Calle	.....	.....	30.02	762.4	81.7	27.6	64	NW	.....	.....	6	.....	5	.....	.....	0	0	Cloudy	Foufrede.
Tunis	.....	.....	30.03	762.7	77.0	25.0	78	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.09	764.2	82.4	28.0	.....	NE	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Gau.
Saida	.....	.....	29.99	761.7	91.0	32.8	24	S	.....	.....	6	.....	2	.....	.....	0	0	Fair	Herbin.
Tebessa	.....	.....	30.00	762.1	82.4	28.0	27	N	.....	.....	5	.....	1	.....	.....	0	0	Very fair	Watrin.
Gerlville	.....	.....	30.01	762.2	89.6	32.0	24	SW	.....	.....	10	.....	10	.....	.....	0	0	Covered	Brugniaux.
Laghouat	.....	.....	30.07	763.8	93.2	34.0	23	W	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Bertrand.
Biskra	.....	.....	30.03	762.7	98.2	36.8	27	ESE	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 830? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Gerlville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.61	752.1	30.15	765.7	68.5	20.3	70	NE	.....	.....	5	.....	7	.....	.....	Inap.	Inap.	.....	Prof. Ivan Stožir.
Cracow, I. R. Observatory	29.46	748.2	30.21	767.2	72.0	22.2	66	N	.....	.....	1	.....	4	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.30	744.1	30.15	765.7	72.0	22.2	52	N	.....	.....	2	.....	5cs;s	.....	S	0	0	.....	Julius Mikolik.
Gratz	28.98	736.0	30.19	766.8	71.6	22.0	67	E	.....	.....	2	.....	6	.....	.....	0.016	0.40	.....	Andreas Rospini.
Hermannstadt	28.57	725.7	30.01	762.2	70.3	21.3	69	NW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremtmünster	28.91	734.2	30.23	767.7	65.5	18.6	75	ENE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	29.16	740.6	30.12	765.0	68.0	20.0	65	NE	.....	.....	2	.....	3	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.90	761.0	30.07	763.7	74.5	23.6	59	E	.....	.....	5	.....	8cs	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.68	753 9	30.13	765.2	76.6	24.8	48	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.85	758.1	30.11	764.9	76.8	24.9	59	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.01	762.2	30.11	764.8	77.7	25.4	44	ENE	.....	.....	2	.....	7	.....	.....	0	0	½ Clear	P. Busin.
Vienna	29.53	750.1	30.23	767.8	71.6	22.0	67	WNW	.....	.....	1	.....	8	.....	.....	0.055	1.4	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.96	761.0	30.05	763.3	64.1	17.8	.....	S	17	7.6	.....	.....	2	.....	.....	0.155	3.94	Blue sky.....	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	61	16.1	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.15	765.8	63.9	17.7	.....	SSW	11	4.9	.....	.....	8	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.21	767.3	68.1	20.1	.....	SE	6	2.7	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.80	756.9	30.19	766.8	67.6	19.8	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Blue sky.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	80	26.7	.....	NE	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.24	768.1	74.0	23.3	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	30.27	768.8	68.6	20.3	.....	S	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	30.18	766.6	30.30	769.6	69.2	20.7	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.71	729.2	30.16	766.1	64.0	17.8	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	30.12	765.0	30.15	765.8	65	18.3	.....	SSW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.23	767.8	30.26	768.6	65	18.3	.....	E	.....	.....	1	.....	1	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.21	767.3	71.6	22.0	.....	W	3.0	1.3	.....	.....	.....	.....	.....	.....	.....	Blue sky.....	Thomas Mackereth.
Falmouth, Observatory	30.05	763.3	30.28	769.1	65.1	18.4	.....	ESE	.....	.....	2	.....	7	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.60	701.0	29.91	759.7	72.2	22.3	.....	E	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.73	755.1	29.96	761.0	85	29.4	.....	W	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.88	758.9	29.94	760.5	.....	.....	.....	S	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.91	759.7	30.12	765.0	61.6	16.4	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	30.27	768.8	30.28	769.1	65	18.3	.....	SE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	30.09	764.3	30.25	768.3	72.0	22.2	.....	SE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	30.02	762.5	30.24	768.1	66.5	19.2	.....	NE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.28	769.1	70	21.1	.....	E	.....	.....	1	.....	2ck	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	30.18	766.6	30.23	767.8	65	18.3	.....	SSW	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.98	761.5	30.27	768.8	71.0	21.7	.....	ENE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	J. Fisher.
Kew, Observatory	30.22	767.6	30.26	768.6	67.2	19.6	.....	S	4	1.8	.....	.....	6	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	30.18	766.6	30.21	767.3	63	17.2	.....	WNW	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	30.24	768.1	68.3	20.2	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.98	761.5	30.05	763.3	81	27.2	.....	NW	.....	.....	1	.....	1k	.....	.....	.....	.....	Blue sky.....	Sergt. Beckett.
Nairn	29.90	759.4	29.97	761.2	65	18.3	.....	SW	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.70	754.4	83.8	28.8	.....	SE	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	30.06	763.5	30.25	768.3	71.7	22.1	.....	S	.....	.....	3	.....	1k	.....	SSW	0	0	Blue sky.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.72	754.9	30.23	767.8	69.9	21.1	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.25	768.3	68.0	20.0	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky.....	H.E. Bellamy.
Plymouth	30.18	766.6	30.25	768.3	67.6	19.8	.....	S	.....	.....	3	.....	1	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	30.18	766.6	30.22	767.6	67	19.4	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	30.08	764.0	30.24	768.1	65	18.3	.....	S	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.90	759.4	61	16.1	.....	SW	18	8.0	.....	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.99	761.7	84.4	29.1	.....	ENE	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	29.97	761.2	30.24	768.1	70.9	21.6	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	30.15	765.8	30.18	766.6	63.3	20.2	65	NW	.....	.....	3	.....	3	.....	.....	0.045	1.15	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.82	757.4	30.22	767.6	66.2	19.0	.....	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	Hazy.....	Rev. S. J. Perry.
Stornoway, Lews Castle (Harbor)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	30.06	763.5	30.27	768.8	68.2	20.1	.....	W	.....	.....	0–1	.....	.....	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.90	759.4	65	18.3	.....	WSW	.....	.....	6	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.27	768.8	70	21.1	.....	SE	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.19	766.8	66.9	19.4	.....	SSW	13	5.8	.....	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.82	757.4	47.0	8.3	82	S	.....	.....	1	.....	10k	.....	.....	0.02	0.5	Cloudy.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.6	73.4	23.0	63	ESE	16.5	7.4	.....	0	4	.....	ESE	0.06	1.5	Squally.....	C. Meldrum.
Melbourne, Observatory	29.82	757.4	29.91	759.7	52.2	11.2	86	E	4	1.8	.....	.....	6	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 30° 45′, W. 24° 45′	.....	.....	.....	Capt. D. W. A. Quaile
S. S. Peruvian	2	NNW	Blue sky.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 38° 30′, W. 72° 5′	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	4	ENE	D. clouds.....	Capt. W. Spratly.
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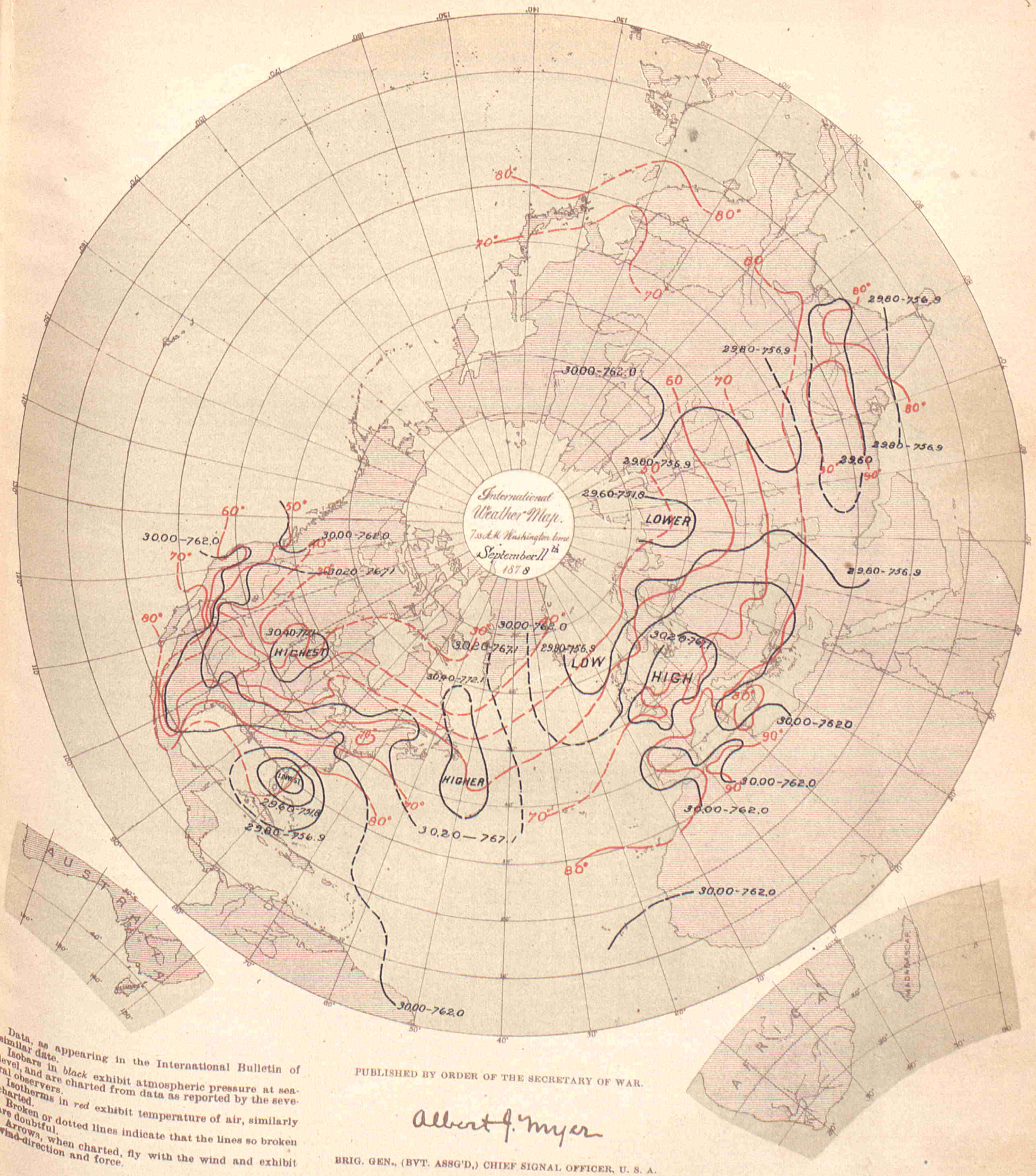
Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.22	666.0	.....	.....	68.0	20.0	95	SE	.....	.....	1	3cs	.....	.....	.....	1.8	46.	.....	Federico Maison
.....																			

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

DANISH SERIES.

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

Copenhagen	30.19	766.9	30.24	768.1	64.0	17.8	57	NW	.....	.....	4	.....	5	.....	.....	.....	.....	.....	
Fanöe	30.26	768.5	30.28	769.0	64.0	17.8	69	W	.....	.....	4	.....	5	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.70	754.3	29.73	755.2	51.3	10.7	92	SW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	
Vestervig	30.03	762.7	30.20	767.0	62.2	16.8	74	W	.....	.....	4	.....	0	.....	.....	.....	.....	Raining	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

FRENCH SERIES.

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

Alençon, Normal School	29.68	753.8	30.23	767.8	72.3	22.4	75	NE	.....	.....	3	.....	2	.....	.....	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.99	761.9	30.08	763.9	83.5	28.6	42	N	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.63	752.6	30.17	766.3	74.1	23.4	50	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.98	761.6	30.26	768.7	70.3	21.3	60	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.31	744.5	30.19	766 8	65.7	18.7	78	ENE	.....	.....	2	.....	8	.....	E	0	0	Very cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.64	752.9	30.18	766.6	72.5	22.5	56	NE	.....	.....	3	.....	0	.....	.....	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.93	760.3	30.18	766.5	78.8	26.0	74	Calm	.....	.....	0	.....	1	.....	Calm	0.030	0.75	.....	The Staff.
Carcassonne, Normal School	29.65	753.1	30.04	763.1	82.4	28	39	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.65	753.1	30.19	766.9	78.1	25.6	85	E	.....	.....	4	.....	0	.....	.....	0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.1	30.23	767.9	76.6	24.8	67	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs	28.80	731.4	30.11	764.7	71.6	22.0	66	NE	.....	.....	1	.....	8	.....	NE	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.37	746.0	30.23	767.8	68.0	20	67	E	.....	.....	3	.....	2n	.....	E	0	0	Slightly cl'dy	Dr. Conlet, Director
Commune de Grèasque*	28.84	732.4	29.98	761.4	82.9	28.3	39	SE	.....	.....	3	.....	2	E	.....	0	0	¼ covered	V. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.03	762.8	30.24	768.1	69.1	20.6	76	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.92	759.9	30.22	767.6	69.1	20.6	71	NE	.....	.....	3	.....	0	.....	.....	0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.27	743.5	30.17	766.2	68.0	20	80	SW	.....	.....	2	.....	5	.....	SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.17	766.3	30.21	767.2	66.9	19.4	88	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.18	741.2	30.20	767.1	68.2	20.1	71	N	.....	.....	2	2c	.....	NE	.....	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.84	757.9	30.06	763.4	87.4	30.8	67	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.10	739.1	30.13	765.2	76.6	24.8	48	N	.....	.....	1	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.32	643.2	.....	.....	55.4	13.0	84	E	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.10	764.4	30.13	765.2	76.3	24.6	60	NE	.....	.....	6	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.14	765.8	30.23	767.9	74.8	23.8	54	N	.....	.....	1	.....	2	.....	E	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.22	767.6	67.8	19.9	81	N	.....	.....	2	.....	1	.....	NNE	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.01	736.9	30.07	763.6	68.0	20	81	WSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.87	758.7	29.90	759.4	77.4	25.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.79	20.	.....	L'Abbé Marchési.
Lyons	.....	.....	30.17	766.4	70.7	21.5	71	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.05	763.3	84 0	28.9	35	SSW	.....	.....	3-4	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	25.05	636.2	30.36	771.2	64.8	18.2	36	WSW	.....	.....	2	.....	2	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	30.07	763.8	78.4	25.8	78	NW	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.3	30.21	767.3	73.0	22.8	54	NNE	.....	.....	3	.....	2	.....	ENE	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.09	764.2	79.7	26.5	47	E	7.4	3.33	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.72	577.0	.....	.....	65.1	18.4	.....	S	.....	.....	1	.....	1	.....	.....	0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	30.06	763.4	30.22	767.6	73 4	23.0	58	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	E. Renou.
Toulouse, Observatory	29.39	746.6	30.00	762.0	75.7	24.3	45	NNW	.....	.....	1	.....	0	.....	.....	0	0	.....	The Staff.
Tours	29.97	761.2	30.17	766.2	74.1	23.4	56	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	C. Marquet.
Versailles	.....	.....	30.23	767.9	73.4	23.0	45	E	.....	.....	2	.....	0	.....	.....	0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.95	760.6	29.97	761.2	68.4	20.2	81	N	2.0	0.9	.....	10ck	.....	.....	.....	0	0	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.31	744.5	30.16	766.0	67.6	19.8	60	E	.....	.....	3	.....	4	E	....	0	0	.....	Prof. Dr. Hoh.
Berlin	30.14	765.6	30.31	769.9	66.9	19.4	54	N	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.78	756.3	30.31	769.9	68.7	20.4	48	NW	.....	.....	2	.....	2	.....	.....	0.007	0.18	.....	Royal University Obs'y
Carlsruhe	29.80	756.9	30.22	767.5	71.2	21.8	70	NE	.....	.....	3	.....	9	.....	.....	0	0	.....	Albert Senz.
Cassel	29.74	755.4	30.35	771.0	68.5	20.3	62	NNE	.....	.....	2	.....	2	NE	.....	0	0	.....	Dr. H. Möhl.
Crefeld	30.12	765.0	30.28	769.1	73.2	22.9	54	N	.....	.....	3	.....	4k	.....	.....	0	0	.....	Director Lose.
Emden	30.27	768.9	30.31	769.8	66.0	18.9	55	E	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.93	760.2	30.29	769.3	70.7	21.5	.....	NNE	.....	.....	3	.....	3	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.78	731.0	30.19	766.8	65.5	18.6	67	NE	.....	.....	6	.....	4	NE	.....	0	0	.....	M. Wilhelm.
Hamburg	30.26	768.7	30.34	770 5	63.5	17.5	70	NW	.....	.....	1	.....	5k	.....	.....	0	0	Fair.....	Captain F. Hegemann.
Kiel	30.29	769.4	30.31	769.8	65.3	18.5	62	W	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	30.09	764.3	30.17	766.4	65.3	18.5	62	NW	.....	.....	5	.....	2	.....	.....	0	0	.....	Prof. E. Luther.
Köslin	.....	.....	30.23	767.9	62.2	16.8	.....	W	.....	.....	4	.....	3	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.92	760.0	30.34	770.5	67.3	19.6	56	NNW	.....	.....	1	.....	6	NNW	.....	0.122	3.1	....	Prof. Bruhns.
Memel, Naval School	30.08	764.1	30.13	765.3	64.0	17.8	61	NW	.....	.....	4	.....	4c;s	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	30.21	767.4	30.23	767.8	66.6	19.2	58	WNW	.....	.....	3	.....	6	.....	.....	0.059	1.5	.....	A. Lothes.
Posen	30.03	762 8	30.32	770.0	66.7	19.3	44	NW	.....	.....	6	.....	1	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.69	754.2	30.23	767.8	71.8	22.1	67	NE	.....	.....	3	.....	2	NE	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.19	741.4	30.23	767.8	68.0	20.0	66	E	.....	.....	1	.....	4	E	.....	0	0	Foggy	Prof. Schoder.
Treves, (Trier)	29.69	754.1	30.22	767.5	72.1	22.3	62	NE	.....	.....	4	.....	2	.....	.....	0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.76	730.6	30.24	768.0	66.6	19.2	72	E	3.1	1.4	.....	.....	7clk	.....	N	0.165	4.2	.....	Dr. Von Bebber.
Wustrow, Naval School	30.31	769.9	30.35	770.9	63.7	17.6	76	W	.....	.....	2	.....	3	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.60	751.9	29.98	761.4	86.7	30.4	.....	NE	.....	.....	3.0	.....	.....	.....	....	.....	.....	Clear.	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

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

Kurrachee	29.60	751.7	29.64	752.9	87.3	30.7	70	WSW	42?	18.8?	.....	.....	8	.....	WSW	0	0	D. clouds.....	
Deesa	29.23	742.3	29.69	754.2	86.5	30.3	80	SSE	.....	.....	.....	.....	8	.....	SW	0	0	D. clouds.....	
Bombay	29.76	755.8	29.80	756.8	79.9	26.6	91	WSW	15	6.7	.....	.....	10	.....	W	1.04	26.4	Overcast.....	
Poona	27.82	706.5	29.82	757.4	76.9	24.9	76	WNW	.....	.....	.....	.....	10	.....	WNW	0	0	D. clouds.....	
Lahore	28.77	730.8	29.48	748.9	96.2	35.7	46	Calm	0.9	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Belgaum	27.30	693.3	29.85	758.1	72.8	22.7	88	W	4	1.8	.....	.....	9	.....	W	0.08	2.0	D clouds.....	
Roorkee	28.57	725.8	29.44	747.8	90.8	32.7	62	NW	2	0.9	.....	.....	1	.....	.....	0	0	.....	
Agra	28.97	735.8	29.52	749.7	91.7	33.2	67	Calm	.....	.....	.....	.....	4	.....	N	0	0	.....	
Nagpur	28.62	727.1	29.66	753.4	80.1	26.7	91	Calm	2	0.9	.....	.....	9	.....	.....	0.52	13.2	.....	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.25	742.9	29.56	750.8	79.2	26.2	87	NW	2.6	1.2	.....	.....	10	.....	W	0.07	1.8	Thunder-storm..	
Patna	29.36	745.6	29.54	750.2	83.6	28.7	87	E	1.2	0.5	.....	.....	10	E	E	0.38	9.6	Lightning...	
Hazaribagh	27.59	700.8	29.58	751.3	80.0	26.7	88	SSW	7.6	3.4	.....	.....	10	.....	W	0.14	3.6	Thunder-storm..	
Cuttack	29.51	749.6	29.59	751.6	87.6	30.9	71	SW	1.8	0.8	.....	.....	6	.....	.....	0	0	D. clouds.....	
Calcutta (Alipore)	29.59	751.5	29.61	752.1	84.7	29.3	85	SSW	3	1.3	.....	.....	5	.....	SW	0	0	D. clouds.....	
Goalpara	29.25	743.0	29.64	752.9	76.6	24.8	92	ESE	4.1	1.8	.....	.....	9	.....	.....	3.62	91.0	D. clouds.....	
Chittagong	29.60	751.8	29.69	754.1	79.9	26.6	91	Calm	4.1	1.8	.....	.....	10	.....	.....	0	0	Overcast.....	
Sibsagar	29.33	744.9	29.66	753.4	80.2	26.8	90	Calm	5.3	2.4	.....	.....	10	W	W	0.94	23.9	Overcast.....	
Jubbulpore	28.31	719.0	29.66	753.5	79.8	26.6	83	NW	3.4	1.5	.....	.....	10	.....	.....	1.09	27.7	Overcast.....	
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

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

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.74	755.3	30.13	765.4	80.4	26.9	41	E	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.01	762 3	30.12	765.0	79.0	26.1	50	E	8.7	3.9	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.93	760.3	30.12	765.0	78.4	25.8	48	E	0	0	.....	.....	1	.....	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.84	732.6	30.13	765.2	78.8	26.0	60	W	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.61	752.2	30.12	765.0	80.2	26.8	64	NE	.....	.....	2	.....	2	SE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.23	742.4	30.11	764.7	81.0	27.2	40	SSW	4.3	1.9	.....	.....	4	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.26	717.9	30.11	764.9	74.5	23.6	51	W	.....	.....	2	.....	4	NE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.84	758.0	30.06	763.5	82.8	28.2	39	ENE	.....	.....	8	.....	2	E	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.90	759.4	30.06	763.5	83.7	28.7	41	SE	.....	.....	2	.....	1	NE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.80	756.8	30.10	764.5	79.9	26.6	41	E	.....	.....	6	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.83	757 7	30.08	764.0	78.8	26.0	51	NNE	.....	.....	4	.....	10	N	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.92	759.9	30.00	762.0	77.7	25.4	61	ENE	12.5	5.6	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.04	762.9	30.08	764.1	75.2	24.0	66	E	.....	.....	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.57	725.7	30.08	764.1	67.6	19.8	79	NE	.....	.....	1	.....	10	.....	.....	0.079	2.0	.....	Prof. P. Serpieri.
Rome	29.79	756.7	29.96	761.0	81.7	27.6	45	N	12.5	5.6	.....	.....	10	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.76	755.9	29.95	760.8	81.0	27.2	61	NE	.....	.....	2	.....	8	NE	.....	1.929	49.0	.....	Prof. L. Palmieri.
Lecce	29.73	755.2	29.98	761.5	82.8	28.2	54	SE	3.1	1.4	.....	.....	6	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.78	756 5	29.97	761.2	81.5	27.5	54	SE	.....	.....	2	.....	6	NE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.10	739.2	29.96	761.0	77.5	25.3	70	SW	.....	.....	1	.....	9	.....	.....	0.433	11.0	.....	Prof. F. D. Conti.
Palermo	29.69	754.2	29.94	760.5	78.3	25.7	53	WNW	6.3	2.8	.....	.....	4	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.85	758.2	29.92	760.0	77.5	25.3	64	NE	2.5	1.1	.....	.....	9	NE	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.4	29.98	761.5	75.7	24.3	66	W	0	0	.....	.....	10	.....	.....	2.303	58.5	.....	Prof. F. Brioschi.

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

JAPANESE SERIES.

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

Nagasaki	29.66	753.3	29.85	758.2	77.2	25.1	88	NE	1.2	0.5	.....	.....	6ck;ks;n]	S	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.97	761.2	30.04	763.0	75.1	23.9	94	SSW	4.9	2.2	.....	.. ..	10s;ck	.....	.....	0.100	2.54	Cloudy.....	
Tokei (Yeddo) University..	29.93	760.2	30.03	762.7	75.1	23.9	98	S	5	2.2	.....	7cs	.....	.....	.....	0.035	0.89	Fair...	Prof. P. V. Veeder.

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Cuernavaca	.....	.....	.....	.....	63.5	17.5	74	N	.....	.....	3	0	4ks	.....	E	0.079	2.0	½ cloudy.....	P. Ceballos.
Guadalajara	25.06	636.4	30.01	762.3	57.6	14.2	80	S	.....	.....	1	8cs	0	NE	.....	0	0	Cloudy	Prof. L. Perez.
Guanajuato	23.69	601.9	29.83	757.9	64.0	17.8	77	ENE	.....	.....	.....	0	9	.....	.....	.....	.....	Rainy.....	F. Ortiz.
Leon	24.42	620.4	29.96	761.1	61.9	16.6	82	NE	.....	.....	3	1c	9n	NE	Calm	0	0	Covered	Prof. M. Leal.
Mexico	23.11	586.9	30.08	764.1	58.1	14.5	85	NW	8.9	4.0	.....	0	10k	.....	NE	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.3	16.3	77	NNW	.....	.....	2	1c	2ks	E	E	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.32	592.2	29.95	760.8	55.6	13.1	83	N	5.8	2.6	.....	1cn	3cks	.....	W	0	0	Partly cl'dy.	Prof. B. Gonzalez.
Tlacotalpam	29.84	758.0	29.85	758.2	77.9	25.5	91	SW	.....	.....	2	7cs	8n	SE	N	1.979	50.25	Threatening	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.14	765.6	62.0	16.7	79	ESE	.....	.....	.....	.....	10	.....	E	0	0	Covered.....	G. Barroeta, M. D.
Vera-Cruz	29.88	758.9	29.91	759.6	80.6	27.0	89	NW	.....	.....	.....	2c	3kn	.....	.....	Inap	Inap.	½ cloudy....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	52.7	11.5	77	NE	.....	.....	1	0	5	.....	E	0	0	½ cloudy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.27	591.2	30.03	762.8	53.6	12.0	91	NE	0.4	0.2	.....	3	2	Calm	Calm	0	0	.....	Prof. P. Spina, [M. M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.32	719.3	29.93	760.3	79.7	26.5	82	E	0.8	0.9	.....	0	9	.....	N	0.055	1.4	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,510 m., or 4,953.9 ft.; Guadalajara, 1,560 m., or 5,117.9 ft.; Guanajuato, 2,010 m., or 6,594.2 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,282.6 m., or 7,488.3 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,893 m., or 5,210.4 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,201.3 m., or 7,223.8 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 502.1 (?) m., or 1,647.3 (?) ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

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

Flushing	30.30	769.5	30.30	769.5	70.9	21.6	.....	SE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Groningen	30.26	768.6	30.32	770.0	65.3	18.5	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.28	769.1	30.28	769.1	64.8	18.2	.....	NE	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.28	769.0	30.28	769.0	73.8	23.2	72	ESE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.26	768.6	30.31	769.8	69.4	20.8	64	E	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	H. v d Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.95	760.8	30.01	762.2	57.2	14.0	96	S	26.4	11.8	.....	.....	10	.....	.....	1.575	40.0	Rain & fog...	
Brönö	29.71	754.6	29.75	755.6	50.0	10.0	83	SW	18	8	.....	.....	10	.....	.....	0.638	16.2	Light rain...	
Christiania	29.87	758.8	30.02	762.4	64.4	18.0	54	WSW	11	5	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.68	753.8	29.72	754.9	47.8	8.8	76	SW	11	5	.....	.....	10	.....	.....	0.067	1.7	Light rain...	

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

PORTUGUESE SERIES.

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

Angra, (Azores)	29.79	756.6	29.98	761.4	72.3	22.4	90	SW	3.8	1.7	.....	.....	8	.....	.....	0.276	7.0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.6	29.98	761.6	60.1	26.7	55	NW	1.8	0.8	.....	.....	4	.....	.....	0.354	9.0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.0	30.09	764.2	76.5	24.7	64	SW	8.1	3.6	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.64	752.9	29.99	761.8	76.8	24.9	63	NE	2.5	1.1	.....	.....	2	.....	.....	0.130	3.3	.....	The Staff.
Ponta Delgada, (Azores)	30.00	762.0	30.07	763.7	78 8	26.0	70	S	11.9	5.3	.....	.....	4	.....	.....	0	0	.....	

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

Naval Series. Vessels.																Sea or swell. Heig scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 39° 19', W. 21° 40'	.....	.....	30.17	766.4	73.8	23.2	.....	SSE	.....	.....	2	.....	8	SW	Calm	2	.....	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03', E. 12° 02'	.....	.....	29.95	760.6	73.4	23.0	.....	WSW	.....	.....	3	.....	0	.....	.....	2	WSW	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	29.95	760.7	81.5	27.5	.....	ENE	.....	.....	2	.....	7	.....	NE	3	S	D. clouds...	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	29.91	759.7	77.0	25.0	.....	W	.....	.....	2	.....	4	.....	W	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.77	756.2	81.5	27.5	.....	NW	.....	.....	2	.....	6	.....	NW	0	.....	Drizzling.....	M T. Guimaraes, Com'd't.

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

RUSSIAN SERIES.

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

Warsaw	29.78	756.4	30.19	766.9	66.9	19.4	50	NW	11	5	.....	.....	3c	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.67	753.6	30.08	763.9	65.7	18.7	69	W	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds....	Astronomical Obs.
Dorpat	29.76	755.8	30.00	761.9	61.3	16.3	48	WNW	9	4	.....	.....	1k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.82	757.5	29.84	757.9	59.0	15.0	69	NW	16	7	.....	.....	6ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.45	748.0	30.07	763.7	64.4	18.0	47	NNW	7	3	.....	.....	5ck	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.07	763.6	30.13	765.4	71.2	21.8	49	NNE	4	2	.....	.....	6ks;n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.03	762.8	30.05	763.3	69.4	20.8	65	NNE	7	3	.....	.....	4	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.44	747.6	29.97	761.2	61.5	16.4	60	N	11	5	.....	.....	5ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.78	756.3	29.98	761.4	64.6	18.1	49	NNE	13	6	.....	.....	5ks	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.65	753.2	29.67	753.7	53.8	12.1	89	SW	2	1	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.50	723.8	29.85	758.2	75.4	24.1	48	N	22	10	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.91	759.6	29.82	757.5	65.7	18.7	82	NW	7	3	.....	.....	9kn	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Krotkowo*	29.28	743.7	29.74	755.5	56.8	13.8	60	W	4	2	.....	.....	9k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.52	749.8	29.79	756.7	52.9	11.6	82	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.77	730.7	29.69	754.2	57.4	14.1	76	Calm	0	0	.....	.....	5ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.55	750.6	29.78	756.3	77.5	25.3	44	NW	22	10	.....	.....	2ks	.....	.....	.....	.....	.....	
Tashkend	28.31	719.1	29.03	760 3	78.4	25.8	56	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.16	740.7	29.67	753.5	62.6	17.1	78	NW	0	0	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Yeniseisk	29.74	755.5	30.03	762.8	53.8	12.1	61	ENE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.74	755.3	29.88	758.9	69.4	20.8	69	S	4	2	.....	.....	1cs	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

SPANISH SERIES.

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

Barcelona, Met. Obs'y	29.96	761.0	30.06	763.5	81.7	27.6	61	SE	1.5	0.67	.....	.....	5c	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.98	761.5	30.04	762.9	83.5	28.6	57	NW	2.1	0.94	.....	2	2	SW	.....	0	0	Cloudy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.14	689.4	.....	.....	77.0	25.0	62	NE	4.7	2.11	.....	.....	.....	.....	.....	0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.84	707.1	29.96	761.0	80.8	27.1	52	E	9.7	4.34	.....	1	6	SE	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	29.87	758.8	30.02	762.5	83.8	28.8	66	ENE	5.4	2.42	.....	2	7	WNW	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.09	738.8	29.94	760.4	82.8	28.2	59	SW	7.9	3.47	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.66	753 2	29.72	754.9	80.0	26.7	87	SW	3.6	1.6	.....	1c	1sk	.....	.....	0.898	22.8	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.6	30.00	762.1	75.4	24.1	66	W	6.6	3.0	.....	0	10	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	29.89	759.1	29.98	761.4	82.8	28.2	88	SE	0	0	.....	3c	3k	SE	SE	0.641	13.75	Clear.....	Leonardo de Tejeda, Ch't Eng'r

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

SWEDISH SERIES.

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

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.80	756.8	29.84	757.8	55.8	13.2	.....	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Umea	29.88	758.9	29.85	758.1	59.7	15.4	61	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	29.88	759.0	29.93	760.3	63.0	17.2	89	S	.....	.....	4	.....	4	.....	.....	0	0	.....	
Stockholm	29.80	758.4	30.04	762.9	62.2	16.8	94	W	.....	.....	4	.....	2	.....	.....	0.091	2.3	.....	
Wisby	.....	.....	.....	.....	.....	.....	.....	NW	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.93	760.1	30.00	762.0	62.2	16.8	67	WSW	12.1	5.4	....	.....	2	NW	W	0	0	.....	Nils Ekholm.

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

SWISS SERIES.

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

Geneva	28.76	730.5	30.15	765.7	68.5	20.3	68	N	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.60	726.5	30.21	767.2	64.9	18.3	78	N	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.3 mm.; Thermometer, +1.6 cent.; Relative Humidity, +7 per cent.

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

TURKISH SERIES

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

Constantinople	.....	.....	30.06	763.5	75.4	24.1	61	ENE	22	10.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.8	80.8	27.1	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.91	759.6	88.0	31.1	51	NW	.....	.....	2	.....	2ks	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

CANADIAN SERIES.

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

Bathurst, N. B	30.09	764.3	30.16	766.1	67.9	19.9	84	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.82	757.4	30.12	765.0	60	15.6	.....	N	1	0.4	.....	.....	10s	.....	N	0.15	3.8	Cloudy	W. R. Bigg.
*Chatham, N. B	30.16	766.1	30.22	767.6	63	17.2	83	SW	2	0.9	.....	8ck	2ks	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.26	768.6	30.30	769.6	65	18.3	76	S	11	4.9	.....	2c	0	Calm	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	30.09	764.3	64.0	17.8	98	NW	.....	.....	1	.....	10n	.....	.....	0.065	1.65	Overcast	James Smith, M. A.
Dalhousie, N. B	30.00	762.0	30.16	766.1	64	17.8	86	N	.....	.....	1	.....	.....	.....	.....	0	0	Fine	H. A. Johnson.
Esquimault, B. C	29.94?	760.5?	29.94?	760.5?	53.2	11.8	87	Calm	.....	.....	.....	.....	10	.....	.....	0	0	Overcast	W. H. Bevis.
*Father Point, Quebec	30.06	763.5	30.08	764.0	66	18.9	74	S	20	8.9	.....	2c	5s	SW	SW	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.20	767.1	30.26	768.6	62.1	16.7	83	SE	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.51	749.5	30.38	771.6	32	0.0	96	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	29.05	737.9	30.14	765.5	56	13.3	100	Calm	.....	0	.....	.....	10n	.....	.....	0	0	Overcast	James Grant.
*Halifax, N. S	30.15	765.8	30.28	769.1	65	18.3	96	SE	4	1.8	.....	5ck	2ks	.....	SE	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.79	756.7	30.16	766.1	60.7	15.9	84	E	.....	.....	2	.....	10s	.....	.....	0.19	4.8	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.38	771.6	30.41	772.4	61	16.1	83	SW	.....	.....	2	3k	4ks	SW	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.81	757.2	30.14	765.5	65	18.3	86	NE	10	4.5	.....	.....	10s	.....	Calm	0.35	8.9	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.32	770.1	30.35	770.9	66.3	19.1	84	W	10	4.5	.....	5k	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.91	759.7	30.19	766.5	64	17.8	94	N	8	1.3	.....	.....	10n	.....	.....	0.03	0.8	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.60	749.3	30.19	766.8	54	12.2	87	N	11	4.9	.....	2cs	2ks	SW	SW	0.62	15.7	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.42	747.3	30.15	765.8	59.7	15.4	88	Calm	.....	0	.....	.....	10n	.....	.....	0.32	8.1	Light rain	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.15	765.8	57	13.9	94	NE	8	3.6	.....	.....	10n	.....	Calm	0.10	2.5	Light rain	H. Morgan.
Port Hastings, N. S	30.29	769.4	30.34	770.6	65.4	18.6	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.51	749.5	30.15	765.8	56	13.3	93	N	1	0.4	.....	.....	10n	.....	S	0.35	8.9	Light rain	M. Payne.
*Quebec, Quebec	29.80	756.9	30.11	764.8	63	17.2	89	NW	.....	.....	.....	.....	10n	.....	NW	.....	.....	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.74	755.4	30.20	767.1	54	12.2	97	NW	4	1.8	.....	8ck	0	NW	.....	0.39	9.9	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.19	766.8	30.24	768.1	60	15.6	88	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	30.11	764.8	30.27	768.8	62	16.7	88	SE	3	1.3	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.46	748.3	30.16	766.1	57	13.9	80	NE	4	1.8	.....	5cs	2ks	W	W	0.81	20.6	Cloudy	K. Stewart.
Stayner, Ontario	29.38	746.2	30.15	765.8	59	15.0	85	Calm	0	0	.....	.....	10n	.....	Calm	0.37	9.4	Cloudy	R. J. Cole.
Stratford, Ontario	29.56	733.0	30.13	765.3	55.9	13.3	96	NE	2	0.9	.....	.....	10s	.....	.....	0.326	8.26	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.34	770.6	30.37	771.4	68	20.0	76	SW	10	4.5	.....	2c	2ks	.....	SW	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.79	756.7	30.17	766.3	59	15.0	87	N	1	0.4	.....	.....	10n	.....	SW	0.24	6.1	Light rain	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Orair.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	60.0	15.6	88	W	.....	.....	.....	4k	4s	.....	.....	0	0	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

UNITED STATES SERIES.

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

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From —	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From —	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.10	764.5	70	21.1	78	S	3	1.3	.....	5ck	Haze	S	.....	0	0	Fair	.....
Alpena, Michigan	29.55	750.6	30.20	767.1	52	11.1	79	NW	6	2.7	.....	2ck	Haze	W	.....	0.01	0.3	Fair	.....
Atlantic City, New Jersey	30.02	762.5	30.04	763.0	70	21.1	100	NE	22	9.8	.....	.....	Fog	.....	Calm	0.01	0.3	Dense fog	....
Augusta, Georgia	29.64	752.8	29.82	757.4	76	24.4	84	E	7	3.1	.....	.....	10ks	.....	E	0.05	1.3	Cloudy	.....
Baltimore, Maryland	29.99	761.7	30.04	763.0	70	21.1	85	E	7	3.1	.....	2c	2s	NE	E	0.02	0.5	Fair	.....
Barnegat, New Jersey	30.01	763.0	30.06	763.5	69	20.6	100	NE	20	8.9	.....	.....	Fog	.....	Calm	0.12	3.0	Foggy	.....
Bismarck, Dakota	28.55	725.2	30.41	772.4	33	0.6	79	Calm	0	0	.....	2cs	0	NW	.....	0	0	Clear	.....
Boerne, Texas	28.74	730.0	.....	.....	63	17.2	57	N	12	5.4	.....	5k	5s	Calm	N	0	0	Clearing	.....
Boise City, Idaho	27.40	696.0	30.36	771.1	44	6.7	67	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	.....
Boston, Massachusetts	30.02	762.5	30.17	766.3	66	18.9	89	NE	5	2.2	.....	.....	10s	fg	NE; Calm	0	0	Cloudy	.....
Brackettville, Texas	29.03	737.3	30.14	765.5	63	17.2	62	N	2	0.9	.....	10cs	0	Calm	.....	0.02	0.5	Cloudy	.....
Breckenridge, Minnesota	29.37	746.0	30.44	773.2	28	— 2.2	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	.....
Brownsville, Texas	29.97	761.2	30.04	763.0	72	22.2	100	N	10	4.5	.....	.....	10ks	.....	N	0.37	9.4	Cloudy	.....
Buffalo, New York	29.42	747.5	30.11	764.8	62	16.7	88	NE	6	2.7	.....	.....	10n	.....	Calm	0.46	11.7	Light rain	..
Burkes, Arizona	.....	.....	.....	.....	79	26.1	47	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	.....
Burlington, Vermont	29.88	758.9	30.13	765.3	70	21.1	79	S	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	.....
Cairo, Illinois	29.74	755.4	30.13	765.3	58	14.4	64	N	23	10.3	.....	0	8s	.....	N	0.30	7.6	Fair	.....
Camp Apache, Arizona	.....	.....	.....	.....	48	8.9	70	N	.....	.....	1	0	0	.....	.....	0	0	Clear	.....
Camp Grant, Arizona	25.27	641.8	30.07	763.8	60	15.6	60	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	.....
Camp Verde, Arizona	26.91	683.5	30 40	772.1	64	17.8	30	E	.....	.....	1	0	0	.....	.....	0	0	Clear	.....
Campo, California	27.41	697 0	30.01	762.2	40	4.4	71	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	.....
Cape Hatteras, N. Carolina	29.92	760.0	29.93	760.2	79	26.1	87	E	8	3.6	.....	2k	0	E	.....	0.05	1.3	Fair	.....
Cape Henry, Virginia	29.94	760.5	29.96	761.0	76	24.4	91	NE	12	5.4	.....	0	8s	.....	NE	0.01	0.3	Cloudy	.....
Cape Lookout, N. Carolina	29.88	758.9	29.90	759.4	79	26.1	91	E	21	9.4	.....	.....	8ks	.....	E	0.34	8.6	Cloudy	.....
Cape May, New Jersey	30.01	762.2	30.04	763.0	72	22.2	95	NE	12	5.4	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	.....
Castroville, Texas	29.37	746.0	30.07	763.8	65	18.3	49	N	10	4.5	.....	5ck	0	W	.....	0.19	4.8	Fair	.....
Charleston, South Carolina	29.73	755.1	29.79	756.7	81	27.2	87	E	14	6.3	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	.....
Cheyenne, Wyoming	24.36	618.7	30.30	769.6	23	— 5.0	86	NW	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	.....
Chicago, Illinois	29.52	749.8	30.22	767.6	47	8.3	70	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	.....
Cincinnati, Ohio	29.43	747.5	30.08	764.0	56	13.3	90	N	12	5.4	.....	.....	10n	.....	N	0.32	8.1	Light rain	...
Cleveland, Ohio	29.38	746.2	30.08	764.0	63	17.2	94	N	14	6.3	.....	.....	10n	.....	NE	0.49	12.4	Heavy rain	..
Coleman City, Texas	28.46	722.9	30.19	766.8	51	10.6	65	N	14	6.3	.....	2c	0	N	.....	0	0	Fair	.....
Columbus, Ohio	29.24	742.7	30.06	763.5	60	15.6	94	NW	10	4.5	.....	.....	10n	.....	NW	0.03	0.8	Light rain	...
Concho, Texas	28.36	720.3	30.07	763.8	53	11.7	64	N	12	5.4	.....	5c	0	N	.....	0	0	Fair	.....
Corsicana, Texas	29.75	755.6	30.22	767.6	57	13.9	58	N	10	4.5	.....	2cs	0	Calm	.....	0	0	Clear	.....
Davenport, Iowa	29.98	753.9	30.34	770.6	42	5.6	83	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	.....
Decatur, Texas	29.11	739 4	30.30	769.6	56	13.3	81	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	.....
Denison, Texas	29.49	749.0	30.30	769.6	53	11.7	73	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	.....
Denver, Colorado	25.13	638.3	30.35	770.9	35	1.7	90	Calm	0	0	.....	.....	Fog	.....	Calm	0.05	1.3	Foggy	.....
Des Moines, Iowa	29.49	749.0	30.39	771.9	52	11.1	66	NW	1	0.4	.....	0	2s	.....	N	0	0	Fair	.....
Detroit, Michigan	29.47	748.5	30.14	765.5	55	12.8	68	N	6	2.7	.....	.....	10s	.....	W	0.42	10.7	Cloudy	.....
Dodge City, Kansas	27.83	706.9	30.18	766.6	50	10.0	86	Calm	0	0	.....	5ck	5s	NW	NW	0	0	Cloudy	.....
Dubuque, Iowa	29.60	751.8	30.33	770.4	43	6.1	75	N	1	0.4	.....	1k	1s	N	Calm	0	0	Fair	.....
Duluth, Minnesota	29.67	753.6	30.37	771.4	42	5.6	83	NW	12	5.4	.....	2k	2s	NW	NW	Inap.	Inap.	Fair	...
Eagle Pass, Texas	29.46	748.3	30.19	766.8	64	17.8	73	N	4	1.8	.....	.....	10s	.....	Calm	0.26	6.6	Cloudy	.....
Eastport, Maine	30.19	766.8	30.26	768.6	60	15.6	88	S	1	0.4	.....	10k	0	S	.....	0	0	Cloudy	.....
Edinburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
El Paso, Texas	.....	.....	.....	.....	69	20.6	58	W	2	0.9	.....	0	0	.....	.....	0.12	3.0	Clear	.....
Erie, Pennsylvania	29.37	746.0	30.07	763.8	65	18.3	89	E	2	0.9	.....	.....	10n	.....	Calm	0.22	5.6	Light rain	..
Escanaba, Michigan	29.62	752.3	30.28	769.1	44	6.7	68	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	.....
Florence, Arizona	28.46	722.9	30.06	763.5	79	26.1	43	E	.....	.....	4	0	0	.....	.....	0	0	Clear	.....
Fort Craig, New Mexico	25.73	653.5	29.80	756.9	60	15.6	59	SW	2	0.9	.....	.....	10s	.....	SW	0	0	Cloudy	.....
Fort Davis, Texas	25.48	647.2	30.44	773.2	54	12.2	43	NE	6	2.7	.....	2k	0	SW	.....	Inap.	Inap.	Fair	.....
Fort Gibson, Indian Ter	29.78	756.4	30.33	770.4	53	11.7	61	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	.....
Fort Griffin, Texas	29.06	738.1	30.37	771.4	50	10.0	72	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	.....
Fort McKavett, Texas	28.03	711.9	29.96	761.0	55	12.8	62	NE	11	4.9	.....	5ck	0	SW	.....	0	0	Fair	.....
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Sill, Indian Territory	29.15	740.4	30.29	769.4	47	8.3	77	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	.....
Fredericksburg, Texas	28.48	723.4	30.03	762.7	61	16.1	61	N	5	2.2	.....	2ck	5ks	Calm	Calm	0	0	Cloudy	.....
Galveston, Texas	29.98	761.5	30.02	762.5	70	21.1	61	N	28	12.5	.....	0	0	.....	.....	0	0	Clear	.....
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Haven, Michigan	29.55	750.6	30.20	767.1	56	13.3	69	NE	1	0.4	.....	5k	0	N	.....	0	0	Fair	.....
Indianapolis, Indiana	29.37	746.0	30.14	765.5	56	13.3	75	NW	8	3.6	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	.....
Indianola, Texas	30.04	763.0	30.07	763.8	71	21.7	80	N	28	12.5	.....	2ck	0	W	.....	0	0	Fair	.....
Jacksboro, Texas	29.17	740.9	30.34	770.6	50	10.0	72	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	.....
Jacksonville, Florida	29.33	745.0	29.36	745.7	77	25.0	91	NE	36	16.1	.....	.....	10n	.....	NE	3.63	92.2	Heavy rain	..
Keokuk, Iowa	29.69	754.1	30.32	770.1	49	9.4	64	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	.....
Key West, Florida	29.60	751 8	29.63	752.6	80	26.7	87	W	24	10.7	.....	.....	10ks	.....	W	0.90	22.9	Cloudy	.....
Kittyhawk, North Carolina	29.91	759.7	29.94	760.5	76	24.4	95	E	10	4.5	.....	0	0	.....	.....	0	0	Clear	.....
Knoxville, Tennessee	28.96	735.6	29.92	760.0	69	20.6	80	Calm	0	0	.....	10cs	0	Calm	.....	0	0	Cloudy	.....
La Crosse, Wisconsin	29.60	751.8	30.35	770.9	45	7.2	84	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	.....
La Mesilla, New Mexico	26.29	667.8	30.44	773.2	58	14.4	49	SE	6	2.7	.....	5k	0	Calm	.....	0	0	Fair	.....
Laredo, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lead City, Dakota	25.11	637.8	30.38	771.6	30	— 1.1	89	S	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	.....
Leavenworth, Kansas	29.52	749.8	30.40	772.1	45	7.2	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	.....
Los Angeles, California	29.55	750.6	29.88	758.9	67	19.4	21	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	.....
Louisville, Kentucky	29.54	750.3	30.10	764.5	55	12.8	81	N	14	6.3	.....	.....	10n	.....	N	0.05	1.3	Light rain	...
Lynchburg, Virginia	29.34	745.2	29.99	761.7	72	22.2	90	Calm	0	0	.....	.....	10n	.....	Calm	0.25	6.3	Light rain	...
Marquette, Michigan	29.55	750.6	30.25	768.3	55	12.8	68	W	9	4.0	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	...
Mason, Texas	28.56	725.4	30.33	770.4	57	13.9	87	N	12	5.4	.....	2ck	Haze	Calm	Calm	0	0	Hazy	.....
Memphis, Tennessee	29.82	757.4	30.14	765.5	61	16.1	61	N	12	5.4	.....	8c	0	N	.....	1.52	38.6	Fair	.....
Milwaukee, Wisconsin	29.54	750.3	30.28	769.1	46	7.8	77	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	.....
Mobile, Alabama	29.80	756.9	29.84	757.9	71.5	21.9	78	N	15	6.7	.....	.....	10s	.....	NE	0	0	Cloudy	.....
Montgomery, Alabama	29.62	752.3	29.84	757.9	74	23.3	76	N	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	.....
Morgantown, West Virginia	28.97	735.8	29.98	761.5	68	20.0	84	N	2	0.9	.....	2cs	5ks	NE	N	0	0	Cloudy	.....
Mt. Washington, N. H.	24.09	611.9	30.45	773.4	50	10.0	93	SW	5	2.2	.....	.....	Fog	.....	SW	0	0	Foggy	.....
Nashville, Tennessee	29.53	750.0	30.05	763.3	61	16.1	88	NE	6	2.7	.....	.....	10n	.....	Calm	0.14	3.6	Light rain	...
New Haven, Connecticut	30.01	762.2	30.12	765.0	68	20.0	95	NE	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	.....
New London, Connecticut	30.07	763.8	30.12	765.0	69	20.6	95	N	4	1.8	.....	5k	2s	SW	N	0.05	1.3	Fair	.....
New Orleans, Louisiana	29.82	757.4	29.88	758.9	73	22.8	72	N	18	8.0	.....	.....	10s	.....	N	0	0	Cloudy	.....
Newport, Rhode Island	30.08	764.0	30.13	765.3	66	18.9	95	N	8	3.6	.....	.....	Fog	.....	.....	0	0	Foggy	.....
New York, New York	29.94	760.5	30.12	765.0	68	20.0	94	NE	12	5.4	.....	.....	10s	fg	Calm	0	0	Cloudy	.....
Norfolk, Virginia	29.92	760.0	29.97	761.2	75	23.9	90	E	7	3.1	.....	0	5s	.....	E	0.05	1.3	Fair	.....
North Platte, Nebraska	27.50	698.5	30.23	767.8	33	0.6	89	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	.....
Olympia, Washington Ter.	29.96	761.0	30.00	762.0	50	10.0	93	E	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog	....
Omaha, Nebraska	29.27	743 4	30.38	771.6	45	7.2	84	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	.....
Oswego, New York	29.82	757.4	30.13	765.3	68	20.0	84	N	2	0.9	.....	.....	10n	.....	N	Inap.	Inap.	Light rain	...
Pembina, Dakota	29.55	750.6	30.42	772.7	29	— 1.7	100	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	.....

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.04	763.0	30.09	764.3	68	20.0	95	NE	12	5.4	.....	.....	10s;fg	.....	NE;Calm	0.04	1.0	Cloudy	
Phœnix, Arizona	28.84	732.5	.....	.....	68	20.0	47	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Pike's Peak, Colorado	17.92	454.7	30.14	765.5	13	—10.6	62	NE	10	4.5	.....	0	0	.....	.....	0.45	11.4	Clear.....	
Pioche, Nevada	24.31	617.5	30.08	764.0	47.	8.3	21	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	29.99	761.7	68	20.0	79	NE	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy.....	
Port Huron, Michigan	29.47	748.5	30.12	765.0	58	14.4	64	NW	4	1.8	.....	.....	10ks	.....	Calm	0.37	9.4	Cloudy.....	
Portland, Maine	30.13	765.3	30.18	766.6	64	17.8	94	NE	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
Portland, Oregon	29.96	761.0	30.06	763.5	62	16.7	51	N	4	1.8	.....	.....	Sm'e	.....	Calm	0	0	Smoky.....	
Prescott, Arizona	24.96	634.0	30.32	770.1	40	4.4	56	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Pilot Point, Texas	29.51	749.5	30.35	770.9	56	13.3	56	N	6	2.7	.....	0	Haze	.....	Calm	Inap.	Inap	Hazy.	
Punta Rassa, Florida	29.34	745.2	29.36	745.7	78	25.6	86	W	56	25.0	.....	.....	10n	.....	W	0.84	21.3	Light rain...	
Red Bluff, California	29.60	751.8	29.95	760.7	69	20.6	39	N	6	2.7	.....	Haze	Haze	Calm	Calm	0	0	Hazy.....	
Rio Grande City, Texas	29.95	760.7	30.17	766.3	70	21.1	53	NW	6	2.7	.....	10cs	0	NW	.....	0.10	2.5	Cloudy.....	
Rochester, New York	29.53	750.0	30.13	765.3	61	16.1	88	N	7	3.1	.....	.....	10n;fg	.....	Calm	0.38	9.7	Light rain..	
Roseburg, Oregon	29.47	748.5	30.04	763.0	53	11.7	73	Calm	0	0	.....	5cs	Sm'e	Calm	Calm	0	0	Smoky.....	
Sacramento, California	29.87	758.7	29.95	760.7	64	17.8	76	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
St. Louis, Missouri	29.72	754.9	30.30	769.6	51	10.6	72	N	13	5.8	.....	0	0	.....	.....	0	0	Clear.....	
St. Marks, Florida	29.54	750.3	29.56	750.8	77	25.0	77	N	20	8.9	.....	10ck	0	NE	.....	0.20	5.1	Cloudy.....	
St. Paul, Minnesota	29.50	749.3	30.36	771.1	42	5.6	75	NW	4	1.8	.....	1c	0	Calm	.....	0	0	Clear....	
Salt Lake City, Utah	25.93	658.6	30.26	768.6	44.0	6.7	45	E	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.46	748.3	30.03	762.7	67	19.4	55	N	8	3.6	.....	8cs	0	N	.....	0.68	17.3	Cloudy.....	
San Diego, California	29.83	757.7	29.90	759.4	70	21.1	17	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Sandusky, Ohio	29.46	748.3	30.12	765.0	62	16.7	88	N	24	10.7	.....	.....	10n	.....	N	0.20	5.1	Light rain...	
Sandy Hook, New Jersey	30.06	763.5	30.09	764.3	69	20.6	100	NE	14	6.3	.....	.....	10s	.....	NE	0	0	Cloudy.....	
San Francisco, California	29.97	761.2	30.04	763.0	56	13.3	87	SW	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.51	597.1	30.05	763.3	45	7.2	33	E	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
Savannah, Georgia	29.57	751.1	29.66	753.4	78	25.6	91	NE	28	12.5	.....	.....	10ks	.....	NE	0.23	5.8	Threatening	
Shreveport, Louisiana	29.92	760.0	30.14	765.5	64	17.8	62	N	5	2.2	.....	0	0	.....	.....	Inap	Inap	Clear.....	
Silver City, New Mexico	24.40	622.0	.....	.....	54	12.2	86	N	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy.....	
Smithville, North Carolina	29.83	757.7	29.86	758.4	78	25.6	86	SE	24	10.7	.....	.....	10s	.....	SE	0.57	14.5	Cloudy	
Springfield, Massachusetts	30.02	762.5	30.15	765.8	68	20.0	84	NE	5	2.2	.....	.....	10s	.....	NE	0	0	Cloudy.....	
Stockton, Texas	27.23	691.6	30.23	767.8	51	10.6	45	Calm	0	0	.....	4c	0	SW	.....	0	0	Fair	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	65	18.3	94	NE	6	2.7	.....	1cs	0	S	.....	0	0	Clear.....	
Toledo, Ohio,	29.46	748.3	30.13	765.3	57	13.9	63	NE	4	1.8	.....	.....	10s	.....	NW	0.04	1.0	Cloudy.....	
Tucson, Arizona	27.22	691.4	29.77	756.1	76	24.4	69	S	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	29.63	752.6	29.66	753.4	79	26.1	100	NE	36	16.1	.....	.....	10n	.....	E	0.56	14 2	Light rain..	
Umatilla, Oregon	29.76	755.9	.....	.....	47	8.3	41	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	100	SE	.....	.....	2	.....	10n	.....	SE	.....	.....	Raining	
Uvalde, Texas	29.29	744.0	30.10	764.5	65	18.3	58	NE	2	0.9	.....	5ck	1s	Calm	NE	0.06	1.5	Fair.....	
Vicksburg, Mississippi	29.82	757.4	30.07	763.8	67	19.4	79	N	5	2.2	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy.....	
Virginia City, Montana	24.56	623.8	30.04	763.0	39	3.9	55	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.63	752.6	30.00	762.0	60	15.6	65	SE	4	1.8	.....	2c	0	Calm	.....	0	0	Clear	
Washington, D. C	29.92	760.0	30.03	762.7	72	22.2	80	NE	7	3.1	.....	3ck;k	2s	Calm;NE	Calm	Inap.	Inap	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	70	21.1	24	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.78	756.4	29.86	758.4	74	23.3	100	NE	7	3.1	.....	.....	10n	.....	NE	0.07	1.8	Light rain...	
Winnemucca, Nevada	29.85	758.6	30.21	767.3	41	5.0	19	NE	9	4.0	.....	2cs	0	Calm	.....	0	0	Fair.....	
Wood's Holl, Mass	30.08	764.0	30.13	765.3	70	21.1	90	E	5	2.2	.....	Haze	5s	Calm	SE	0	0	Fair.....	
Yankton, Dakota	29.13	739.9	30 47	773.9	44	6.7	84	Calm	0	0	.....	.....	10s	.....	W	0	0	Cloudy.....	
Yuma, Arizona	29.72	754.9	29.88	758.9	75	23.9	19	N	7	3.1	.....	0	0	.....	.....	0	0	Clear.	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Havana, Cuba, W. I	30.20	767.1	30.24	768.1	33.0	0.6	95	N	16	7.2	.....	4k	0	N	.....	0	0	Fair.....	J. Fortescue, W. Wood.
Santiago de Cuba, W. I	29.72	754.9	29.74	755.4	81	27.2	87	SW	6.0	2.7	.....	2c	0	W	.....	0.65	16.5	Fair.....	Chas. Hasselbrink.
St. Thomas	29.86	758.4	29.88	758.9	81	27.2	83	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Robert Mason.
Kingston, Jamaica, W. I	.....	.....	.....	.....	83	28.3	83	SE	4	1.8	.....	2c	4n	E	.....	0.20	5.1	Cloudy.....	G. O. Gellich.
Navassa, W. I	30.09	764.3	30.10	764.5	79	26.1	91	Calm	0	0	.....	2c	8n	Calm	SE	4.08	103.6	.....	James Gall.
Paramaribo, D. Guiana, S. A	29.83	757.7	29.91	759.7	84	28.9	.....	SE	10.9	4.9	.....	.....	.....	.....	.....	0	0	Partly cloudy	F. M. Everett.
Medellin, Colombia, S. A	30.01	762.2	30.01	762.2	83	28.3	75	SE	.....	.....	2	4c	5k	E	.....	0	0	Clear.....	C. J. Hering
.....	25.22	640.6	.....	.....	66.5	19.2	80	Calm	0	0	.....	6k	Haze	.....	.....	0	0	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,859 (?) ft., or 871.4 (?) m.; Fredericksville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,456 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.5 (?) m.; Fort Davis, 5,203 ft., or 1,585.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	29.92	760.0	77	25 0	77	25.0	82	N	19	8.5	.....	.....	1	.....	N	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.17‡	766.3‡	.....	.....	62	16.7	88	ENE	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.02*	762.5*	77	25.0	76.5	24.7	91	SW	.....	.....	3	.....	9ks;ck	....	SW	0	0	.....	.....	Cloudy.....	
Adams. S. 40° 05′, W. 166° 33′.....	30.74	780.8	59	15.0	51	10.6	93	E	.....	.....	3	.....	10	.....	E	0	0	Mod'ate	ENE	Cloudy.....	
Alliance, Villafranca, France	30.06‡	763.5‡	.....	.....	79	26.1	51	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy...	
Ashuelot. Yokohama, Japan	30.09	764.3	78	25.6	77	25.0	91	SSW	.....	.....	3	.....	8	.....	SSW	.....	.....	Smooth	.....	Hazy.....	
Alaska. S. 48° 57′, W. 77° 46′..	29.69	754.1	54	12.2	44	6.7	84	NNW	.....	.....	4	.....	5	.....	S	0.07	1.8	Heavy long	NW	D. clouds.....	
Canonicus, New Orleans, La.....	29.96	761.0	54	12.2	72	22.2	90	N	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	30.10‡	764.5‡	.....	.....	68	20.0	95	ENE	14	6.3	.....	.....	10	.....	NE	0.01	0.3	.....	.....	Foggy	
Constitution, Havre, France.....	30.21‡	767.3‡	.....	.....	69	20.6	95	N	.....	.....	1	.....	1	.....	E	.....	.....	.....	.....	Clear.....	
Despatch, N. 39° 20′, E. 24° 50′	29.99‡	761.7‡	.....	.....	78	25.6	77	NNE	.....	.....	3	.....	2	.....	N	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.....	30.07	763.8	78	25.6	76	24.4	100	E	4.8	2.1	.....	.....	5	.....	E	0.18	4.6	.....	.....	Fair.....	
Gettysburg Villafranca, France.....	29.98*	761.5‡	.....	.....	88	31.1	97	SSE	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Guard, Bahia, Brazil.....	30.21	767.3	79	26.1	77	25.0	73	ESE	.....	.....	4	.....	8	.....	ESE	.....	.....	.....	.....	Fair.....	
Hartford, Rio de Janeiro, Brazil ...	30.15	765.8	.....	.....	72	22.2	76	NNW	2.4	1.1	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	
Marion. N. 41° 22′, E. 12° 16′..... ...	30.00	762.0	78	25.6	80	26.7	61	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Michigan, Lake Erie.....	29.98†	761.5†	.....	.....	65	18.3	89	NE	.....	.....	7	.....	10	.....	NE	.....	.....	Short; heavy	N;E	Drizzling.....	
Monocacy. Ura-no-go-ura, Japan.....	30.01‡	762.2‡	.....	.....	78	25.6	83	S	.....	.....	1–2	.....	8	.....	S	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.....	29.88†	758.9†	.....	.....	80	26.7	87	NE	32	14.3	.....	.....	8	.....	.....	0	0	.....	.....	Cloudy	
Onward, Callao, Peru.....	30.06†	763.5†	.....	.....	63	17.2	89	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.15	765.8	72	22.2	72	22.2	100	NE	.....	.....	2	.....	2	.....	WSW	.....	.....	.....	.....	Clear	
Palos, Tientsin, China.....	30.00	762.0	76	24.4	72	22.2	62	SSE	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	.....	
Plymouth. New York, N. Y..... ...	30.19	766.8	71	21.7	70	21.1	95	NE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Foggy.....	
Ranger. Hong-Kong, China.....	29.92	760.0	81	27.2	80	26.7	78	NW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.96	761.0	74	23.3	74	23.3	90	NW	.....	.....	3	.....	5	.....	N	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.02‡	762.5‡	.....	.....	71	21.7	55	NE	.....	.....	3	.....	8	.....	NE	0.03	0.8	.....	.....	Cloudy	
Saratoga, Delaware River.....	30.06*	763.5*	.....	.....	68	20.0	95	NE	.....	.....	2	.....	5	.....	SW	Slight	Slight	.....	.....	Cloudy.....	
St. Louis, League Island, Pa.....	30.05	763.3	72	22.2	70	21.1	90	NE	5	2.2	.....	.....	10	.....	NE	0	0	.....	.....	Cloudy.....	
Supply, Havre, France.....	30.30	769.6	68	20.0	70	21.1	80	N	.....	.....	0–1	.....	5	.....	N	.....	.....	.....	.....	Fair.....	
Swatara, Boston, Mass.....	30.16‡	766.1‡	.....	.....	67	19.4	95	NE	.....	.....	2	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
Trenton, Southampton, England.	30.24‡	768.1‡	.....	.....	73	22.8	76	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Tuscarora. La Paz, Mexico.....	29.66	753.4	77	25.0	79	26.1	78	S	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Fair.....	
Vandalia. Villafranca, France.....	30.05‡	763.3‡	.....	.....	81	27.2	56	S	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.17‡	766.3‡	.....	.....	65	18.3	94	NE	1	0.4	.....	.....	10	.....	Calm	0	0	.....	.....	Cloudy.....	

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

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co'peration of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, N. 46° 30', W. 124° 50'		30.07*	763.8*				E			1		Fog				Smooth		Fair	Capt. Cobb.
S. S City of Peking, N. 36° 42', W. 169° 28'		29.86†	758.4†	66	18.9	100	W	11	4.9			10		W	Heavy	Small	W	Raining	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 30° 16' W. 117° 50'		29.89†	759.2†	65	18.3	??	WNW			3		0		0	Small	WNW		Misty	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, N. 39° 45', W. 124° 19'		30.03†	762.7†	53	11.7	93	ENE			1		0		0	Small	NW		Foggy	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

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

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

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

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

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

S. S. Belgic, N. 23° 36', E. 117° 48'		29.68*	753.9*	76	24.4	73	NE			6		n		NE		Rough	NE	Misty	Capt. L. Myer.
S. S. Gaelic, N. 32° 04', E. 130° 58'		29.67†	753.6†	84	28.9	96	SE			5		k;hz		NE		Heavy	High	SE	Raining	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

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

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

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

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 43° 38', W. 50° 26'		30.52	775.2	60	15.6	65	Calm			0		1		E		3	ENE	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

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

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—		CHARACTER.	DIRECTION FROM—		
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.11*	764.8*	69	20.6	100	NNE			3		10		NNE	0			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		30.21	767.3	69	20.6	85	SSW			2		4		SSW				Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

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

RED STAR LINE MARINE SERIES.

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

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 40° 39′, W. 69° 41′		30.14*	765.5*				NE	20	8.9			8		NE		Heavy	SE	Showery	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

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

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

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

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 26′, W. 76° 15′		29.90	759.4	84	28.9	71	SE	9	4.0		2c	5k	NW	SE	0 1.00 in or 25.4 mm.	Swell	NE	D. clouds	Capt. James Jorgensen.
Schooner Florence, Nantic		30.39*	771 9*	29.0	—1.7		WNW			3.0	1ck	6ks		W				Light snow	O. T. Sherman.

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

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

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

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

Albert J. Myer

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

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 12, 1878.

7:35 A. M. WASHINGTON mean time.

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

ALGERIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.04	762.9	70.9	21.6	83	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	29.98	761.5	77.2	25.1	74	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Kesxuche.
Algiers	.....	.....	29.92	760 0	77.4	25.2	82	Calm	.....	.....	0	.....	10	.....	.....	0.071	1.8	Covered	Tourillere.
La Calle	.....	.....	29.97	761.1	77.0	25.0	76	ENE	.....	.....	5	.....	8	.....	.....	0	0	Very cloudy	Foufrede.
Tunis	.....	.....	30.00	762.1	70.3	26.3	70	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.07	763.7	80.6	27.0	.....	ENE	.....	.....	3	.....	0	.....	.....	0.047	1.2	Clear	Gau.
Saida	.....	.....	29.95	760.6	70.6	24.8	93	N	.....	.....	3	.....	5	.....	.....	0.209	5.3	Cloudy	Herbin.
Tebessa	.....	.....	29.99	761.7	81.3	27.4	31	NW	.....	.....	6	.....	4	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	29.97	761.2	83.1	28.4	72	E	.....	.....	9	.....	10	.....	.....	0.118	3.0	Covered	Brugniaux.
Laghouat	.....	.....	30.04	763.1	81.7	27.6	36	ENE	.....	.....	7	.....	2	.....	.....	0	0	Fair	Bertrand.
Biskra	.....	.....	30.01	762.3	84.2	29.0	24	E	.....	.....	1	.....	5	.....	.....	0.039	1.0	Cloudy	Chanvaux.

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

AUSTRIAN SERIES.

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

Agram	29.56	750.7	30.08	764.1	75.6	24.2	59	NE	.....	.....	3	.....	4	.....	.....	0	0	.....	Prof. Ivan Stožir.
Cracow, I. R. Observatory	29.36	745.7	30.10	764.6	72.3	22.4	64	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.24	742.7	30.09	764.3	70.7	21.5	47	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.88	733.5	30.09	764.3	71.8	22.1	69	SW	.....	.....	3	.....	4	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.71	729.2	30.13	765.4	76.5	24.7	52	SE	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.74	729.9	30.04	763.0	68.0	20.0	74	E	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	29.14	740.2	30.11	764 7	65.8	18.8	70	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.04	760.5	30.05	763.2	79.9	26.6	47	E	.....	.....	2	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.68	753.9	30.13	765.2	76.3	24.6	55	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.80	756.9	30.07	763.7	79.7	26.5	72	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	79.7	26.5	55	WSW	.....	.....	1	.....	0	.....	.....	0	0	Fair	P. Busin.
Vienna	29.35	745.5	30.04	762.9	77.7	25.4	50	SSE	.....	.....	1	.....	1	.....	.....	0	0	.....	I.R. Central Met.Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

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

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

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

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.94	760.5	30.04	763.0	58.4	14.7	.....	NW	21	9.4	.....	.....	2	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	30.09	764.3	30.11	764.8	60	15.6	.....	WNW	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds....	George Carrick.
Armagh, Observatory	.....	.....	30.24	768.1	58.9	14.9	.....	NW	8	3.6	.....	.....	5	.....	.....	.....	.....	D. clouds....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.12	765.0	59.2	15.1	.....	NW	22	9.8	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.69	754.1	30.08	764.0	56.3	13.5	.....	NE	.....	.....	4	.....	10	.....	.....	0.02	0.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	83	28.3	.....	NE	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.06	763.5	54.0	12.2	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	H. Todd. [H. C.
Cardington	.....	.....	30.08	764.0	59.0	15.0	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.94	760.5	30.06	763.5	64.2	17.9	.....	SE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.70	729.0	30.17	766.3	57.0	13.9	.....	NW	.....	.....	4	.....	7	.....	.....	.....	.....	Drizzling....	Alexander Watt.
Donaghadee	30.14	765.5	30.17	766.3	60	15.6	.....	NNW	.....	.....	4	.....	2	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	30.02	762.5	30.04	763.0	69	20.6	.....	W	.....	.....	3	.....	4	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.06	763.5	60.8	16.0	.....	N	10.4	4.6	.....	.....	7	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	30.00	762.0	30.22	767.6	66.7	19.3	.....	NW	.....	.....	4	.....	7	.....	.....	.....	.....	Overcast....	The Staff.
Fort Napier, (Natal)	27.44	697.0	29.75	755.6	88.0	31.1	.....	NE	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.74	755.4	29.97	761.2	79	26.1	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	30.25	768.3	63	17.2	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	30.00	762.0	.....	.....	.....	SE	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.88	758.9	30.09	764.3	59.2	15.1	.....	NW	.....	.....	6	.....	2	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.97	761.2	29.98	761.5	64	17.8	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	G. T. Watson.
Greenwich, Royal Obs'y	29.88	758 9	30.05	763.3	67.8	19.9	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.96	761.0	30.18	766.6	65	18.3	.....	NW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.25	768.3	68	20.0	.....	NW	.....	.....	2	.....	1c	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	30.15	765.8	30.20	767.1	58	14.4	.....	NNW	.....	.....	6	.....	5	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.92	760.0	30.21	767.3	65.9	18.8	.....	NW	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	J. Fisher.
Kew, Observatory	30.03	762.7	30.06	763.5	66.5	19.2	.....	W	11	4.9	.....	.....	9kd	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	30.20	767.1	30.23	767.8	60	15.6	.....	NNW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	30.06	763.5	60.0	15.6	.....	NW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.95	760.7	82	27.8	.....	NW	.....	.....	1	.....	1k	.....	.....	.....	.....	Blue sky.....	Beckett.
Nairn	29.97	761.2	30.04	763.0	58	14.4	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.86	758.4	84.0	28.9	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.86	758.4	30.05	763.5	59.7	15.4	.....	WNW	.....	.....	5	.....	10k;d;	clk]	.....	WSW; WNW]	0.049	1.24	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.57	751.1	30.09	764.3	56.0	14.4	.....	NW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.10	764.5	58	14.4	.....	N	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	H.E. Bellamy.
Plymouth	30.09	764.3	30.17	766.3	68.0	20.0	.....	W	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	30.23	767.8	30.28	769.1	61	16.1	.....	NNE	.....	.....	5	.....	5	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	30.05	763.3	30.21	767.3	60	15.6	.....	N	.....	.....	4	.....	2	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.97	761.2	54.5	12.5	.....	W	23	10.3	.....	.....	4	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.03	762.7	77.6	25.3	.....	ENE	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.80	756.9	30.08	764.0	59.8	15.4	.....	NW	.....	.....	5	.....	6	.....	.....	.....	0.01	0.3	D. clouds....	W. F. Cooper.
Silloth Rectory	30.06	763.5	30.10	764.5	64.3	17.9	59	NW	.....	.....	4	.....	1	.....	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	29.71	754.6	30.11	764.8	55.8	13.2	.....	NW	.....	.....	3	.....	8	.....	.....	.....	.....	Squally.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.87	758.7	30.09	764.3	67.7	19.8	.....	NW	.....	.....	2	.....	7	.....	.....	.....	.....	Showery.....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.01	762.2	57	13.9	.....	WNW	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	30.24	768.1	68	20.0	.....	N	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	.....	.....	30.32	770.1	62.4	16.9	.....	NNE	11	4.9	.....	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	54.0	12.2	88	NW	.....	.....	2	.....	8k	.....	.....	.....	0.01	0.3	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.12	765.0	71.4	21.9	82	ESE	12.0	5.4	.....	0	10	.....	ESE	0.09	2.3	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.85	758.2	29.94	760.5	59.2	10.1	90	W	2	0.9	.....	.....	3	.....	.....	0.22	5.6	Heavy dew..	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series.

Vessels.

	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 30° 15′, W. 25° 30′	0	.....	D. clouds.....	Capt. D. W. A. Quaile Capt. W. H. Smith, R. N. [R.
S. S. Peruvian	.....	.....	.....	
Schooner Traveller, N. 38° 45′, W. 69° 45′	4	Con-fused.	Blue sky.....	Capt. Alex. Simpson. Capt. W. Spratly.
Barque Virginia	.....	.....	.....	
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Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26 24	666.5			66.2	19.0	92	SE			1	2cs				0.3	8.		Federico Maison

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

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.84	757.8	29.88	759.0	65.1	18.4	59	W			4		5						
Farôe	29.86	758.4	29.88	758.9	63.1	17.3	87	WSW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Farôe)	29.80	756.9	29.84	757.8	50.2	10.1	79	WSW			4		10						
Vestervig	29.81	757.2	29.98	761.5	63.0	17.2	86	SSW			6		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.64	752.9	30.19	766.9	66.2	19	83	NE			3		0			0	0	Clear	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.98	761.5	30.06	763.5	86.0	30	40	W			1		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.48	748.8	30.02	762.4	73.2	22.9	59	E			3		5kn		W	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.82	757.3	30.10	764.4	72.0	22.2	60	WNW			1		2		NW	0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.17	740.9	30.04	763.1	76.6	24.8	66	SW			2		8		E	0	0	Very cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.57	751.0	30.10	764.6	72.5	22.5	72	N			1		5k		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.91	759.8	30.16	766.0	71.6	22.0	62	N			2		7		N	0	0		The Staff.
Carcassonne, Normal School	29.65	753.0	30.04	763.1	84.2	29	41	NE			1		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.61	752.2	30.16	766.0	75.2	24	78	E			2		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.76	755.9	30.07	763.6	73.4	23.0	65	NE			1		2	NW	NW	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.5	30.00	762.0	80.6	27.0	45	NE			1		5		SW	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.24	742.8	30.10	764.5	68.0	20	74	E			3		5kn		E	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	29.00	736.5	30.14	765.5	85.1	29.5	38	S			2		8	E		0	0	¾ covered	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	30.03	762.8	30.24	768.1	69.1	20.6	94	NE			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.83	757.7	30.13	765.4	71.6	22	66	NE			3		2		N	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.22	742.3	30.11	764.8	73.0	22.8	79	S			1		1		S	0	0	Clear	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.17	766.2	30.13	765.3	73.6	23.1	83	N			1		0			0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.08	738.7	30.10	764.4	69.6	20.9	78	N			1		2ck		S	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.85	758.1	30.07	763.6	90.3	32.4	65	S			1		0			0	0		Boyer, Director.
Privas, Normal School	29.06	738.1	30.08	763.9	81.3	27.4	47	N			1		1	S	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.33	643.4			59.9	15.5	62	SW			3		1			0	0	Almost clear	Alluard, Director.
Rochefort, Naval Obs'y	30.09	764.2	30.12	765.0	81.7	27.6	58	NNE			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.02	762.4	30.10	764.5	72.9	22.7	59	W			1		2		W	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)			30.18	766.5	66.4	19.1	68	NNW			2		1		NW	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.05	737.8	30.11	764.8	64.4	18	80	SW			2		5	SSW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.47	12		L'Abbé Marchès.
Lyons			30.10	764.6	77.7	25.4	65						1			0	0		L. Jays.
Marseilles, Observatory			30.05	763.2	82.0	27.8	43	SW			2		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	25.05	636.2	30.36	771.2	66.4	19.1	37	WNW			3		1		SE	0	0		M. Cave.
Nice			30.07	763.8	77.5	25.3	74	NW			1		1			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.80	757.0	30.08	764.0	72.5	22.5	47	NW			2		4			0	0		Marié Davy, Director
Perpignan			30.10	764.4	80.4	26.9	57	SE	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.76	578.0			55.2	12.9		W			1		7			0	0	Cloudy	Gen'l de Nansouty
Saint Maur, (near Paris)	29.91	759.8	30.08	764.0	73.6	23.1	52	NNW			1		3		WNW	Inap.	Inap.		E. Renou.
Toulouse, Observatory	29.40	746.7	30.00	762.1	78.8	26.0	42	NW			2		0			0	0		The Staff.
Tours	29.90	759.5	30.10	764.5	74.8	23.8	54	NE			1		0			0	0	Clear	C. Marquet.
Versailles			30.10	764.5	74.5	23.6	42	NW			1		3			0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.92	759.9	29.94	760.5	68.2	20.1	97	NW	2.9	1.3			10n			0.012	0.3	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.18	741.1	30.02	762.5	67.6	19.8	66	E			2		1	E		0	0		Prof. Dr. Hoh.
Berlin	29.94	760.4	30.10	764.6	71.6	22.0	55	S			3		4			0	0		Prof. Arndt.
Breslau	29.58	751.4	30.11	764.9	72.3	22.4	49	S			1		0			0	0		Royal University Obs'y
Carlsruhe	29.62	752.3	30.04	762.9	70.5	21.4	76	SW			2		0			0	0		Albert Senz.
Cassel	29.42	747.2	30.02	762.6	73.8	23.2	58	S			4		5	SW		0	0		Dr. H. Möhl.
Crefeld	29.86	758.4	30.02	762.5	72.7	22.6	59	W			1		5k			0	0		Director Lose.
Emden	29.90	759.5	29.94	760.4	70.3	21.3	61	WSW			3		1			0	0		Prof. Prestel.
Frankfort on the Main	29.68	753.8	30.03	762.8	74.3	23.5		SSW			1		4			0	0		Physical Society.
Friedrichshafen	28.67	728.2	30.07	763.8	66.6	19.2	87	SSW			2		0			0	0		M. Wilhelm.
Hamburg	29.91	759.6	29.97	761.3	68 5	20.3	68	SW			4		2k			0	0	Clear.	Captain F. Hegemann.
Kiel	29.90	759.5	29.92	759.9	68.4	20.2	60	W			3		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.94	760.4	30.02	762.5	64.0	17.8	69	W			4		6			0	0		Prof. E. Luther.
Köslin			29.97	761.3	68.5	20.3		S			4		1						H. Müller.
Leipsic, Observatory	29.64	752.8	30.04	763.1	74.1	23.4	51	SW			2		6	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.97	761.3	30.02	762.5	64.9	18.3	68	WSW			5		5s			0	0		Reinbrecht and Skalweit.
Neufahrwasser	30.04	762.9	30.05	763.3	68.4	20.2	53	SSW			4		7			0	0		A. Lothes.
Posen	29.82	757.4	30.10	764.6	70.3	21.3	48	WSW			5		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.54	750.2	30.07	763.7	71.4	21.9	74	S			1		0			0	0		Astronomical Observatory.
Stuttgart	29.13	739.8	30.04	762.9	70.7	21.5	70	E			1		5	W		0.110	2.8		Prof. Schoder.
Treves, (Trier)	29.48	748.9	30.01	762.2	73.4	23.0	62	W			4		3			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.60	726.4	30.07	763.7	62.2	16.8	82	S	2.5	1.1			6ck		S	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.99	761.8	30.03	762.8	65.1	18.4	74	WSW			2		3			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.66	753.4	30.04	762.9	82.8	28.2		NE			2.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the Coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.47	748.6	29.52	749.8	86.2	30.1	78	WSW	33?	14.8?			9		WSW	0	0		D. clouds
Deesa	29.11	739.3	29.57	751.2	87.0	30.6	73	W					4		W	0	0		D. clouds
Bombay	29.64	752.9	29.68	753.9	79.8	26.6	92	W	21	9.4			10		S	0.39	9.9		Overcast
Poona	27.83	706.8	29.83	757.7	77.2	25.1	81	WNW					10		WNW	0	0		Overcast
Lahore	28.69	728.8	29.40	746.8	86.4	35.8	46	Calm	0.8	0.4			0			0	0		Bluesky
Belgaum	27.23	691.6	29.78	756.3	72.0	22.2	91	WNW	7	3.1			10		WNW	0.01	0.3		Drizzling
Roorkee	28.51	724.2	29.40	746.7	80.8	27.1	80	NW	2	0.9			6						Thunder storm
Agra	28.90	734.1	29.45	748.0	90.7	32.6	57	W											
Nagpur	28.63	724.6	29.56	750.8	82.1	27.8	78	Calm	5.4	2.4			8		W	0	0		D. clouds
Lucknow																			
Allahabad	29.10	740.6	29.46	748.4	84.9	29.4	84	Calm	1.5	0.7			7	E		0.01	0.3		D. clouds
Patna	29.35	745.6	29.54	750.2	79.5	26.4	93	E	0.9	0.4			10	E	E	1.18	30.0		Overcast
Hazaribagh	27.54	699.6	29.54	750.4	76.8	24.9	85	ESE	6.7	3.0			10		SE	0.13	3.3		Thunder-storm
Cuttack	29.44	747.6	29.52	749.7	87.1	30.6	80	Calm	1.5	0.7			6			0	0		Thunder
Calcutta (Alipore)	29.51	749.5	29.53	750.1	77.8	25.4	95	E	3	1.3			10	E	E	0	0		Overcast
Goalpara	29.21	742.0	29.60	751.9	75.4	24.1	92	E	6.7	3.0			10			0.55	14.0		Overcast
Chittagong	29.52	749.8	29.61	752.2	83.4	28.6	89	Calm	2.7	1.2			9			0	0		Overcast
Sibsagar	29.34	745.1	29.67	753.6	78.1	25.6	93	ENE	3.1	1.4			10			0.08	2.0		Drizzling
Jubbulpore	28.27	718.0	29.63	752.5	79.8	26.6	87	NW	8.3	3.7			10			0	0		Overcast

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.69	754.1	30.09	764.2	77.7	25.4	43	E	1.8	0.8	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.97	761.3	30.08	764.0	78.1	25.6	48	NE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.89	759.3	30.08	764.0	77.7	25.4	47	NNE	0.7	0.3	.....	.....	0	.....	.....	0.028	0.7	.....	Conte Alm. Da Schio.
Bergamo	28.79	731.2	30.07	763.8	77.4	25.2	60	SW	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.58	751.2	30.08	763.9	79.9	26.6	50	E	.....	.....	1	.....	1	W	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.21	741.8	30.08	764.1	78.1	25.6	65	NNW	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.23	717.0	30.08	764.0	72.7	22.6	56	W	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.82	757.3	30.03	762.8	80.1	26.7	55	ENE	.....	.....	6	.....	3	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.87	758.8	30.04	762.9	82.6	28.1	45	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.76	755.9	30.07	763.6	79.2	26.2	44	NE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.80	756.9	30.05	763.2	80.1	26.7	44	NE	.....	.....	4	.....	6	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.93	760.3	30.01	762.3	81.0	27.2	44	NE	10.5	4.7	.....	.....	1	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.02	762.6	30.07	763.8	74.8	23.8	68	NE	.....	.....	.....	.....	1	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.58	726.0	30.10	764.4	69.1	20.6	69	NE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.83	757 7	30.07	762.0	81.5	27.5	49	E	0	0	.....	.....	7	.....	.....	0.031	0.8	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.79	756.7	29.99	761.7	79.5	26.4	53	NE	.....	.....	2	.....	7	SE	.....	0.224	5.7	.....	Prof. L. Palmieri.
Lecce	29.78	756.4	30.03	762.7	71.8	22.1	83	WSW	3.8	1.7	.....	.....	10	.....	.....	1.791	45.5	.....	Prof. C. De Giorgi
Cagliari	29.79	756.7	29.98	761.4	80.4	26.9	57	SE	.....	.....	2	.....	3	SW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.14	740.2	30.00	762.0	75.9	24.4	75	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.72	755.0	29.97	761.2	77.0	25 0	64	NNW	9.4	4.2	.....	.....	2	.....	.....	0.083	2.1	.....	Prof. G. Cacciatore.
Syracuse	29.92	760.0	30.00	761.9	79.2	26.2	61	S	2.5	1.1	.....	.....	4	NW	.....	0.059	1.5	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.46	748.2	30.01	762.3	75.0	23.9	76	WSW	0	0	.....	.....	10	.....	.....	0.217	5.5	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.28	743.7	29 48	748.8	73.9	23,3	98	NE	37.7	10.9	.....	.....	10n	.....	.....	2.640	67.06	Rainy	
Tokei (Yeddo) Observatory.	30.03	762.7	30.09	764.3	73.2	22.9	93	S	3.0	1.3	.....	0	0	.....	.....	0	0	Fair.....	I. Arai, Director.
Tokei (Yeddo) University..	29.98	761.5	30.08	764.0	75.2	24	95	S	3.5	1.6	.....	1cs	.....	.....	.....	0.115	2.92	Fine.....	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.3	18.5	74	NW	.....	.....	4	4cs	0	E	.....	0	0	¾ cloudy.....	P. Ceballos.
Guadalajara	25.11	637.8	30.07	763.9	58.1	14.5	50	NE	.....	.....	3	4cs	0	.....	.....	0	0	Fair.....	Prof. L. Perez.
Guanajuato	23.74	603.0	29.95	760.9	61.7	16.5	67	ENE	.....	.....	.....	2	0	E	.....	0	0	Clear.....	F. Ortiz.
Leon	24.47	621.6	30.03	762.9	58.6	14.8	63	SW	.....	.....	2	0	0	.....	.....	0	0	Clear.....	Prof. M. Leal.
Mexico	23.16	588.2	30.18	766.5	54.5	12.5	92	N	2.2	1.0	.....	0	10n	.....	N	0.04	1.1	Light rain...	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.7	15.4	80	SW	.....	.....	1	0	10k	.....	E	Imap.	Imap.	Covered.....	M. V. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	Prof. B. Gonzalez.
Tlacotalpam	29.93	760.3	29.95	760.6	73.4	23	91	N	.....	.....	7	5cs	7n	S	N	0.43	11.	Rainy.....	M, M. Cházaro.
San Luis Potosi	24.28	616.1	30.23	767.8	56.0	13.3	40	ESE	3.1	0.4	.....	.....	10	.....	ESE	0.004	0.1	Covered.....	G. Barroeta, M. D.
Vera-Cruz	29.96	761.1	29.99	761.7	79.7	26.5	69	NNW	24.6	11.0	.....	.....	10n	.....	N	0.020	0.5	.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	52.7	11.5	79	NE	.....	.....	2	0	4	.....	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.27	591.2	30.03	762.8	53.6	12.0	82	.....	15.6	7.0	.....	1	5	Calm	Calm	0	0	Misty.....	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
San Juan E. Michapam	28.86	720.4	29.98	761.4	79.7	26.5	81	SE	0.8	0.4	.....	0	6	.....	NE	1.008	25.6	¾ cloudy.....	R. Banda, C. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.03	762.8	30.03	762.8	69.3	20.7	.....	W	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.91	759 6	29.96	761.0	66.7	19.3	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.95	760.8	29.95	760.8	66.6	19.2	.....	SW	.....	.....	4	.....	.....	.....	.....	0.114	2.9	.....	
Hellevoetsluis	30.00	762.1	30.00	762.1	70.3	21.3	73	WSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.96	760.9	30.00	762.1	72.7	22.6	65	WSW	.....	.....	4	.....	5	.....	.....	0.118	3.0	Cloudy.....	H. v d Bruk.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.68	753.9	29.74	755.3	55.4	13.0	68	WNW	13.9	6.2	.....	.....	3	.....	.....	0.551	14.0	.....	
Brōno	29.52	749.9	29.56	750.9	47.5	8.6	95	N	27	12	.....	.....	9	.....	.....	0	0	.....	
Christiania	29.41	746.9	29.55	750.5	64.6	18.1	66	SW	13	6	.....	.....	10	.....	.....	.....	.....	Raining	
Tromsō	29.21	742.0	29.26	743.1	46.8	8.2	81	Calm	0	0	.....	.....	10	.....	.....	0.220	5.6	Light rain	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the cooperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.87	758.6	30.06	763.4	69.1	20.6	92	S	4.3	1.9	.....	.....	8	.....	.....	0.230	6.0	.....	Dr. J. A. Sampaio.
Campo Major	29.08	738.5	30.05	763.3	82.4	28.0	43	ENE	4.3	1.9	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.0	30.13	765.2	78.1	25.6	62	SW	6.9	3.1	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	754.8	30.06	763.5	81.5	27.5	55	SE	4.9	2.2	.....	.....	0	.....	.....	0.012	0.3	.....	The Staff.
Ponta Delgada, (Azores)	30.06	763.4	30.09	764.2	76.3	24.6	76	S	11.2	5.0	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.															Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 39° 53′, W. 20° 11′	.....	.....	30.24	768.0	71.1	21.7	.....	ESE	.....	.....	3	.....	10	SW	W	2	.....	Gloomy	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	29.96	761.0	73.4	23.0	.....	WSW	.....	.....	3	.....	0	.....	.....	2	WSW	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	30.02	762.6	79.7	26.5	.....	SW	.....	.....	4	.....	2	.....	SW	4	SW	D. clouds	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.93	760.2	76.5	24.7	.....	WNW	.....	.....	1	.....	10	.....	Calm	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.76	755.9	82.8	28.2	.....	N	.....	.....	4	.....	8	.....	N	2	.....	D. clouds	M. T. Guimaraes, Com'd't.

NOTE.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.69	754.0	30.10	764.5	67.5	19.7	53	WSW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.64	752.9	30.05	763.3	63.9	17.7	62	WSW	2	1	.....	.....	9	.....	.....	.....	.....	Heavy clouds.	Astronomical Obs.
Dorpat	29.58	751.2	29.81	757.3	62.4	16.9	69	WSW	11	5	.....	.....	10ks;n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.71	754.5	29.72	754.9	57.6	14.2	86	WSW	20	9	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.41	747.0	30.03	762.7	64.4	18.0	59	NNW	7	3	.....	.....	3ks;k	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.01	762.3	30.08	764.1	77.0	25.0	51	W	4	2	.....	.....	8kn	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.03	762.7	30.05	763.2	72.1	22.3	70	SW	4	2	.....	.....	7	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.35	745.4	29.89	759.1	59.5	15.3	50	N	13	6	.....	.....	2ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.66	753.4	29.86	758.5	64.0	17.8	64	W	4	2	.....	.....	5	.....	.....	Blank	Blank	.....	Meteorological Obs.
Archangel	29.59	751.6	29.61	752.1	49.8	9.9	83	W	4	2	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.54	724.8	29.90	759.4	72.5	22.5	49	N	22	10	.....	.....	7n	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.00	762.1	29.92	760.0	67.5	19.7	40	NW	4	2	.....	.....	10ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.19	741.3	29.65	753.1	55.9	13.3	85	WNW	7	3	.....	.....	6k	.....	.....	Blank	Blank	.....	Cand. Fatjanow.
Kasan	29.41	747.0	29.67	753.7	59.5	15.3	76	WSW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.61	726.8	29.54	750.2	55.0	12.8	65	W	11	5	.....	.....	4ck;ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.52	749.7	29.74	755.4	76.8	24.9	51	Calm	0	0	.....	.....	3ks	.....	.....	.....	.....	.....	
Tashkend	28.02	711.8	29.63	752.6	78.8	26.0	70	Calm	0	0	.....	.....	9	.....	.....	.....	.....	Light clouds	Teich, A. M.
Barnaul	29.19	741.3	29.70	754.3	55.0	12.8	70	NW	0	0	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.51	749.5	29.80	756.8	53.4	11.9	59	E	7	3	.....	.....	8	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.89	759.3	30.04	762.9	61.5	16.4	55	N	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.95	760.7	30.05	763.3	80.6	27	62	E	1.7	0.78	.....	.....	4c	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.08	763.9	30.13	765.3	79.3	26.3	61	NW	2.9	1.31	.....	2	2	N	.....	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.18	690.3	.....	.....	80.6	27.0	64	NE	7.2	3.20	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.90	708.7	30.01	762.3	82.0	27.8	55	NE	3.7	1.67	.....	1	2	E	.....	0.228	5.8	.....	The Staff.
Murcia, Met. Obs'y	29.88	759.0	30.02	762.6	86.0	30.0	50	NE	5.0	2.22	.....	2	7	NNW	.....	Inap.	Inap.	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.17	740.8	30.03	762.7	77.9	25.5	58	NE	12.2	5.47	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.78	756.5	29.85	758.1	79.2	26.2	90	Calm	0	0	.....	1c	1sk	.....	.....	0.532	13.5	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
Sao Fernando, Naval Obs'y	29.97	761.2	30.07	763.7	75.0	23.9	77	WSW	9.1	4.1	.....	0	10	.....	S	0.335	8.5	Raining	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.89	759.2	29.98	761.5	81.3	27.4	86	S	0	0	.....	2s	3k	S	S	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.28	743.7	29.32	744.7	54.7	12.6	.....	W	.....	.....	4	.....	8	.....	.....	0	0	.....	
Umea	29.36	745.7	29.41	747.0	53.6	12 0	86	NW	.....	.....	2	.....	10	.....	.....	0.118	3.0	.....	
Hernosand	29.34	745.2	29.39	746.5	52.7	11.5	92	N	.....	.....	4	.....	10	.....	.....	0.150	3.8	.....	
Stockholm	29.48	748.7	29.65	753.2	64.4	18.0	94	WSW	.....	.....	6	.....	9	.....	.....	0	0	.....	
Wisby	29.78	756.3	29.84	757.8	64.4	18.0	67	WSW	.....	.....	8	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.53	750.0	29.60	751.9	60.4	15.8	78	SW	17.2	7.7	.....	.....	10	.....	WSW	0.172	4.36	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.70	729.0	30.08	764.0	70.3	21.3	70	N	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.49	723.6	30.07	763.6	73.4	23.0	70	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.8 mm.; Thermometer, +2.7 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.11	764.8	73.4	23.0	52	ENE	27	12.0	.....	5	.....	NE	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.9	79.3	26.3	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.76	755.9	29.88	758.9	86.0	30.0	56	W	.....	.....	1	.....	2ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.26	768.6	30.34	770.6	66.9	19.4	88	Calm	0	0	.....	0	5k	.....	.....	0	0	Fair	Hon. J. Ferguson.
Brockville, Ontario	29.75	755.6	30.05	763.3	63	17.2	.....	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	W. R. Bigg.
*Chatham, N B	30.30	769.6	30.36	771.1	62	16.7	95	Calm	0	0	.....	2k	8ks	SE	SE	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island.	30.34	770.6	30.38	771.6	67	19.4	92	SE	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.88	758.9	30.06	763.5	63.8	17.7	93	E	.....	.....	1	0	10n	.....	.....	0.119	3.02	Light rain	James Smith, M. A
Dalhousie, N. B	30.17	766.3	30.33	770.4	66	18.9	89	SE	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	29.92	760.0	29.96	761.0	49.3	9.6	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.29	769.4	30.31	769.9	54	12.2	93	NE	14	6.3	.....	.....	Fog	.....	NE	0.15	3.8	Foggy	J. McWilliams.
Fredericton, N. B	30.25	768.3	30.31	769.9	67.1	19.5	87	Calm	0	0	.....	5ck	9s	SE	.....	0.690	17.53	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.28	743.7	30.12	765.0	40	4.4	91	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	28.99	736.3	30.09	764.3	50	10.0	100	N	.....	.....	1	.....	10n	.....	.....	0.96	24.4	Raining	James Grant.
*Halifax, N. S	30.19	766.8	30.32	770.1	68	20.0	95	SE	11	4.9	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.12	765.0	55.7	13 2	83	E	.....	.....	2	.....	10s	.....	.....	1.09	27.7	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.44	773.2	30.46	773.7	60	15.6	85	SW	.....	.....	1	3k	3ks	W	.....	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.76	755.9	30.09	764.3	61	16.1	94	NE	12	5.4	.....	.....	10n	.....	NE	0.01	0.3	Light rain	S. Woods, M. A.
Little Glace Bay, N. S	30.44	773.2	30.48	774.2	63.5	17.5	97	S	4	1.8	.....	.....	10n	.....	.....	0.13	3.3	Foggy	C. H. Rigby.
*Montreal, Quebec	29.91	759.7	30.10	764.5	64	17.8	94	NE	8	3.6	.....	5ck	5s	.....	NE	0.03	0.8	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.47	748.5	30.17	766.3	52	11.1	96	N	12	5.4	.....	.....	10n	.....	N	0.73	18.5	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.31	744.5	30.04	763.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.39	746.5	30.08	764.0	52	11.1	100	N	14	6.3	.....	.....	10n	.....	NE	1.03	26.2	Threatening	H. Morgan.
Port Hastings, N. S	30.37	771.4	30.42	772.7	62.6	17.0	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Foggy	Peter Grant.
Port Stanley, Ontario	29.45	748.0	30.10	764.5	52	11.1	92	N	8	3.6	.....	.....	10n	.....	NE	0.96	24.4	Light rain	M. Payne.
*Quebec, Quebec	29.91	759 7	30.23	767.8	61	16.1	88	NE	.....	.....	7	.....	10n	.....	NE	0.16	4.1	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.73	755.1	30.18	766.6	52	11.1	93	NW	5	2.2	.....	.....	10s	.....	E	0.87	22.1	Light rain	W. H. McIntyre.
St. Andrews, N. B	30.18	766.6	30.23	767.8	65	18.3	91	SE	5	2.2	.....	5k	5n	S	.....	0.02	0.5	Cloudy	Dr. Gove.
St. John, N. B	30.14	765.5	30.30	769.6	67	19.4	89	E	10	4.5	.....	.....	9s	.....	.....	1.36	34.5	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.15	765.8	54	12.2	92	NE	10	4.5	.....	.....	10ks	.....	NE	0.85	21.6	Cloudy	K. Stewart.
Stayner, Ontario	29.35	745.5	30.12	765.0	54	12.2	90	N	6	2.7	.....	.....	10n	.....	N	1.02	25.9	Light rain	R. J. Cole.
Stratford, Ontario	28.80	731.5	30.08	764.0	49.9	9.9	98	NW	5	2.2	.....	.....	10n	.....	.....	0.637	16.18	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.46	773.7	30.48	774.2	64	17.8	98	SE	4	1.8	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.69	754.1	30.08	764.0	53	11.7	95	N	17	7.6	.....	.....	10n	.....	S	1.10	27.9	Light rain	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	60.0	15.6	88	S	.....	.....	.....	0	1k	.....	.....	0	0	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

1878.—September 12.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	30.02	762.5	70	21.1	85	N	3	1.3	.....	0	8ks	.....	E	0	0	Fair	
Alpena, Michigan	29.53	750.0	30.17	766.3	56	13.3	74	N	8	3.6	.....	5ck	2ks	S	N	0	0	Fair	
Atlantic City, New Jersey	29.97	761.2	29.98	761.5	70	21.1	100	NE	11	4.9	.....	.....	10s;fg	.....	Calm	0.03	0.8	Cloudy	
Augusta, Georgia	29.26	743.2	29.43	747.5	75	23.9	95	NE	15	6.7	.....	.....	10n	.....	NE	4.32	109.7	Heavy rain	
Baltimore, Maryland	29.94	760.5	29.99	761.7	71	21.7	90	E	5	2.2	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Barnegat, New Jersey	29.97	761.2	29.99	761.7	70	21.1	97	NE	6	2.7	.....	.....	Fog	.....	Calm	0.05	1.3	Foggy	
Bismarck, Dakota	28.29	718.6	30.15	765.8	43	6.1	67	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Boerne, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Boise City, Idaho	27.25	692.1	30.21	767.3	49	9.4	37	S	3	1.3	.....	5cs	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	29.96	761.0	30.11	764.8	65	18.3	100	NE	12	5.4	.....	.....	10n;fg	.....	Calm;NE	0.38	9.7	Light rain	
Brackettville, Texas	29.15	740.4	30.19	766.8	61	16.1	55	NE	5	2.2	.....	Haze	0	Calm	.....	0	0	Hazy	
Breckenridge, Minnesota	29.22	742.2	30.28	769.1	29	—1.7	100	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.12	765.0	30.18	766.6	69	20.6	41	N	10	4.5	.....	5ck	0	N	.....	0	0	Fair	
Buffalo, New York	29.32	744.7	30.02	762.5	55	12.8	100	N	13	5.8	.....	.....	10n	.....	NW	2.10	53.3	Light rain	
Burkes, Arizona	.....	.....	.....	.....	80	26.7	55	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.86	758.4	30.12	765.0	66	18.9	94	N	4	1.8	.....	2k	0	SE	.....	0	0	Fair	
Cairo, Illinois	29.70	754.4	30.09	764.3	53	11.7	67	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	51	10.6	45	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.36	644.1	30.16	766.1	57	13.9	47	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.95	684.5	30.44	773.2	57	13.9	41	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.54	699.5	30.11	764.8	43	6.1	75	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.86	758.4	29.87	758.7	82	27.8	83	SE	20	8.9	.....	5cs	0	SE	.....	0.02	0.5	Fair	
Cape Henry, Virginia	29.88	758.9	29.90	759.4	78	25.6	86	NE	18	8.0	.....	0	5s	.....	NE	0	0	Fair	
Cape Lookout, N. Carolina	29.77	756.1	29.78	756.4	83	28.3	83	SE	40	17.9	.....	.....	10ks	.....	SE	0.22	5.6	Cloudy	
Cape May, New Jersey	29.98	761.5	30.01	762.2	72	22.2	90	E	5	2.2	.....	.....	10s	.....	E	0	0	Cloudy	
Castroville, Texas	29.48	748.8	30.20	767.1	57	13.9	58	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	29.39	746.5	29.45	748.0	80	26.7	91	SE	12	5.4	.....	.....	10s	.....	SE	4.26	108.2	Threatening	
Cheyenne, Wyoming	24.18	614.2	30.12	765 0	31	—0.6	79	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.46	748.3	30.15	765.8	54	12.2	93	NW	8	3.6	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Cincinnati, Ohio	29.36	745.7	30.00	762.0	59	15.0	82	N	12	5.4	.....	.....	10n	.....	N	0.37	9.4	Light rain	
Cleveland, Ohio	29.33	745.0	30.04	763.0	60	15.6	94	NE	12	5.4	.....	.....	10n	.....	NE	1.01	25.7	Heavy rain	
Coleman City, Texas	28.48	723.4	30.18	766.6	51	10.6	79	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.16	740.7	29.99	761.7	57	13.9	93	N	10	4.5	.....	.....	10n	.....	NW	0.87	22.1	Light rain	
Concho, Texas	28.36	720 3	30.10	764.5	47	8.3	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.80	756.9	30.29	769.4	51	10.6	65	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.65	753.1	30.30	769.6	43	6.1	83	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Decatur, Texas	29.13	739.9	30.32	770.1	56	13.3	85	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.48	748.8	30.30	769.6	51	10.6	86	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.95	633.7	30.17	766.3	41	5.0	57	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.44	747.8	30.33	770.4	53	11.7	61	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.44	747.8	30.11	764.8	54	12.2	93	N	4	1.8	.....	.....	10s	.....	N	0.20	5.1	Cloudy	
Dodge City, Kansas	27.66	702.6	30.00	762.0	45	7.2	92	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.61	752.1	30.34	770.6	44	6.7	76	NE	4	1.8	.....	8k	0	NE	.....	0	0	Fair	
Duluth, Minnesota	29.64	752.8	30.34	770.6	43	6.1	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.52	749.8	30.28	769.1	57	13.9	81	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Eastport, Maine	30.17	766.3	30.24	768.1	60	15.6	94	E	20	8.9	.....	.....	10s	.....	E	0.10	2.5	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
El Paso, Texas	.....	.....	.....	.....	65	18.3	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.33	745.0	30.03	762.7	59	15.0	100	NE	15	6.7	.....	.....	10n	.....	Calm	2.42	61.5	Heavy rain	
Escanaba, Michigan	29.65	753.1	30.33	770.4	41	5.0	74	NW	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Florence, Arizona	28.55	725.2	30.15	765.8	75	23.9	37	E	.....	.....	4	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.74	653.8	29.80	756.9	51	10.6	59	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.45	646.4	30.41	772.4	56	13.3	44	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.74	755.4	30.30	769.6	44	6.7	92	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Fort Griffin, Texas	29.03	737.3	30.34	770.6	48	8.9	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	28.05	712.5	30.00	762.0	54	12.2	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.09	738.9	30.24	768.1	47	8.3	77	W	4	1.8	.....	0	2s	.....	Calm	0	0	Fair	
Fredericksburg, Texas	28.53	724.6	30.10	764.5	63	17.2	47	N	5	2.2	.....	2c	0	Calm	.....	0	0	Fair	
Galveston, Texas	30.12	765.0	30.16	766.1	63	17.2	52	N	22	9.8	.....	2cs	0	Calm	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.54	750.3	30.19	766.8	53	11.7	73	NE	10	4.5	.....	0	5s	.....	Calm	0	0	Fair	
Indianapolis, Indiana	29.31	744.5	30.09	764.3	52	11.1	86	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.19	766.8	30.21	767.3	61	16.1	71	N	26	11.6	.....	1ck	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	29.12	739.6	30.26	768.6	55	12.8	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.45	748.0	29.43	748.8	75	23.9	91	W	12	5.4	.....	.....	10n	.....	W	1.45	36.8	Light rain	
Keokuk, Iowa	29.63	752.6	30.26	768.6	47	8.3	77	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.79	756.7	29.82	757.4	82	27.8	83	W	12	5.4	.....	5c	0	Calm	.....	0	0	Fair	
Kittyhawk, North Carolina	29.85	758.2	29.88	758.9	78	25.6	95	SE	13	5.8	.....	2c	2s	Calm	SE	0.02	0.5	Fair	
Knoxville, Tennessee	28.88	733.5	29.85	758.2	62	16.7	83	N	1	0.4	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
La Crosse, Wisconsin	29.59	751.6	30.35	770.9	41	5.0	100	N	2	0.9	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
La Mesilla, New Mexico	26.28	667.5	30.43	772.9	49	9.4	44	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.83	757.7	30.17	766.3	61	16.1	55	N	4	1.8	.....	10ck	0	W	.....	0	0	Cloudy	
Lead City, Dakota	24.92	633.0	30.19	766.8	39	3.9	82	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Leavenworth, Kansas	29.44	747.8	30.39	769 6	45	7.2	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.61	752.1	29.93	760.2	74	23.3	15	N	10	4.5	.....	0	1s	.....	Calm	0	0	Clear	
Louisville, Kentucky	29.48	748.8	30.03	762.7	57	13.9	75	N	7	3.1	.....	.....	10s	.....	NW	0.70	17.8	Cloudy	
Lynchburg, Virginia	29.23	742.4	29.88	758.9	73	22.8	95	E	6	2.7	.....	.....	10n	.....	Calm	0.49	12.4	Light rain	
Marquette, Michigan	29.58	751.3	30.31	769.9	42	5.6	74	W	13	5.8	.....	5k	0	W	.....	0.02	0.5	Fair	
Mason, Texas	28.61	726.7	30.36	771.1	56	13.3	56	N	4	1.8	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.82	757.4	30.14	765.5	52	11.1	64	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.52	749.8	30.26	768.6	49	9.4	71	NW	14	6.3	.....	.....	9ks	.....	SE	0	0	Cloudy	
Mobile, Alabama	29.84	757.9	29.89	759.2	65	18.3	63	N	15	6.7	.....	0	0	.....	.....	Inap	Inap.	Clear	
Montgomery, Alabama	29.60	751.8	29.82	757.4	65	18.3	73	NW	12	5.4	.....	.....	10s	.....	N	0	0	Cloudy	
Morgantown, West Virginia	28.87	733.3	29.87	758.7	68	20.0	84	E	3	1.3	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	
Mt. Washington, N. H.	24.08	611.6	30.44	773.2	55	12.8	100	S	38	17.0	.....	.....	10n	.....	S	0.77	19.6	Light rain	
Nashville, Tennessee	29.49	749.0	30.02	762.5	58	14.4	70	NW	6	2.7	.....	.....	10s	.....	NW	0.32	8.1	Cloudy	
New Haven, Connecticut	29.88	758.9	30.00	762.0	68	20.0	95	NE	15	6.7	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	
New London, Connecticut	29.96	761.0	30.01	762.2	70	21.1	100	NE	7	3.1	.....	.....	10n	.....	NE	0.13	3.3	Light rain	
New Orleans, Louisiana	29.89	759.2	29.95	760.7	67	19.4	50	NW	19	8.5	.....	Haze	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	29.98	761.5	30.03	762.7	71	21.7	95	E	12	5.4	.....	.....	10n	.....	E	0.08	2.0	Light rain	
New York, New York	29.83	757.7	30.00	762.0	70	21.1	95	NE	14	6.3	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Norfolk, Virginia	29.86	758.4	29.92	760.0	77	25.0	91	SE	10	4.5	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
North Platte, Nebraska	27.32	693.9	29.96	761.0	42	5.6	74	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	46	7.8	100	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	29.20	741.7	30.32	770.1	43	6.1	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.72	754.9	30.03	762.7	69	20.6	85	S	6	2.7	.....	.....	10s	.....	S	0.11	2.8	Cloudy	
Pembina, Dakota	29.31	744.5	30.16	766.1	35	1.7	90	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.96	761.0	30.01	762.2	70	21.1	95	Calm	0	0	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.88	733.5	.....	.....	69	20.6	43	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.98	454.8	30.19	766.8	24	-4.4	74	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear.	
Pioche, Nevada	24.27	616.4	30.04	763.0	49	9.4	24	SW	2	0.9	.....	8c	0	Calm	.....	0	0	Fair	
Pittsburg, Pennsylvania	29.13	739.9	29.91	759.7	63	17.2	94	NW	5	2.2	.....	.....	10n	.....	Calm	0.58	14.7	Light rain	
Port Huron, Michigan	29.44	747.8	30.10	764.5	58	14.4	82	E	17	7.6	.....	.....	10ks	.....	E	0.64	16.3	Cloudy	
Portland, Maine	30.10	764.5	30.15	765.8	63	17.2	100	NE	8	3.6	.....	.....	Fog	.....	.....	0.14	3.6	Dense fog	
Portland, Oregon	30.02	762.5	30.13	765.3	55	12.8	81	N	2	0.9	.....	.....	Sm'e	.....	Calm	0	0	Smoky	
Prescott, Arizona	24.98	634.5	30.34	770.6	41	5.0	57	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.52	749.8	30.37	771.4	55	12.8	68	N	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	29.75	755.6	29.77	756.1	79	26.1	82	W	20	8.9	.....	2k	5s	W	W	0.13	3.3	Fair	
Red Bluff, California	29.65	753.1	30.00	762.0	67	19.4	46	E	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	30.08	764.0	30.30	769.6	65	18.3	35	NW	4	1.8	.....	2ck	0	NW	.....	0	0	Fair	
Rochester, New York	29.40	746.7	30.00	762.0	63	17.2	94	SE	4	1.8	.....	.....	Fog	.....	S	0.17	4.3	Foggy	
Roseburg, Oregon	29.53	750.0	30.10	764.5	54	12.2	84	Calm	0	0	.....	.....	10s;sm	.....	Calm	0	0	Cloudy	
Sacramento, California	29.94	760.5	30.02	762.5	65	18.3	44	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.25	768.3	47	8.3	77	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	29.63	752.6	29.64	752.8	70	21.1	75	NW	16	7.2	.....	2ck	0	SW	.....	0	0	Fair	
St. Paul, Minnesota	29.45	748.0	30.32	770.1	37	2.8	90	NW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
Salt Lake City, Utah	25.84	656.3	30.16	766.1	51.6	10.8	26	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.56	750.8	30.15	765.8	67	13.9	63	N	2	0.9	.....	2c	0	Calm	.....	0	0	Clear	
San Diego, California	29.86	758.4	29.92	760.0	73	22.8	21	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.40	746.7	30.07	763.8	59	15.0	94	NE	24	10.7	.....	.....	10n	.....	NE	1.30	33.0	Light rain	
Sandy Hook, New Jersey	29.97	761.2	30.00	762.0	69	20.6	100	NE	16	7.2	.....	.....	Fog	.....	NE	0.05	1.3	Foggy	
San Francisco, California	30.01	762.2	30.07	763.8	56	13.3	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.48	596.4	30.02	762.5	43	6.1	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.26	743.2	29.35	745.5	77	25.0	100	E	4	1.8	.....	.....	10n	.....	Calm	3.78	96.0	Light rain	
Shreveport, Louisiana	29.99	761.7	30.21	767.3	58	14.4	58	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.42	620.3	.....	.....	44	6.7	75	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.64	752.8	29.67	753.6	79	26.1	91	SE	36	16.1	.....	.....	10n	.....	SE	0.77	19.6	Light rain	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	70	21.1	80	NE	8	3.6	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	
Stockton, Texas	27.28	692.9	30.28	769.1	44	6.7	36	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.08	764.0	30.13	765.3	64	17.8	100	NE	6	2.7	.....	.....	Fog	.....	.....	0.13	3.3	Foggy	
Toledo, Ohio,	29.40	746.7	30.07	763.8	56	13.3	87	NE	12	5.4	.....	.....	10s	.....	NW	0.16	4.1	Cloudy	
Tucson, Arizona	27.27	692.6	29.82	757.4	73	22.8	69	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.31	744.5	29.34	745.2	79	26.1	95	SE	12	5.4	.....	.....	Fog	.....	SE	3.07	78.0	Foggy	
Umatilla, Oregon	29.65	753.1	.....	.....	48	8.9	49	SE	12	5.4	.....	.....	Sm'e	.....	SE	0	0	Smoky	
Unalashka, Aleutian Islands	.....	.....	.....	.....	53	11.7	79	S	.....	.....	1	10c	0	SW	.....	0.26	6.6	Fair	
Uvalde, Texas	29.39	746.5	30.21	767.3	56	13.3	69	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.41	620.0	29.89	759.2	47	8.3	48	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.69	754.1	30.06	763.5	56	13.3	69	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.88	758.9	29.99	761.7	69	20.6	95	E	7	3.1	.....	.....	10ks	.....	E	1.30	33.0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	54	N	.....	.....	1	0	0	.....	.....	0	0	Clear.	
Wilmington, N. Carolina	29.60	751.8	29.67	753.6	77	25.0	100	SE	24	10.7	.....	.....	10n	.....	SE	1.64	41.7	Light rain	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	43	6.1	28	SW	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Wood's Holl, Mass	30.01	762.2	30.06	763.5	71	21.7	95	SE	8	3.6	.....	.....	10n	.....	SE	0.15	3.8	Light rain	
Yankton, Dakota	29.03	737.3	30.38	771.6	34	1.1	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.79	756.7	29.95	760.7	75	23.9	40	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.29	769.4	30.34	770.6	32.5	0.3	95	N	18	8.0	.....	4k	2s	NW	N	0.04	1.0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba. W. I	29.84	757.9	29.86	758.4	82	27.8	87	SW	1.2	0.5	.....	8c	0	SW	.....	0.02	0.5	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.89	759.2	29.91	759.7	81	27.2	86	Calm	0	0	.....	8ck	4k	.....	SE	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	83	E	4	1.8	.....	2c	5ks	E	.....	0.27	6.9	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	79	26.1	90	Calm	0	0	.....	8c	0	Calm	.....	0.09	2.3	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	85	29.4	.....	E	9.6	4.3	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	82	27.8	83	SE	.....	.....	3	0	5k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.25	641.3	.....	.....	68.0	20.0	83	Calm	0	0	.....	6cs;k	4ks	.....	.....	0	0	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,376 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.458 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	29.92	760.0	68	20.0	68	20.0	79	NW	20	8.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	
NavyYard,Portsmouth,N.H	30.21‡	767.3‡	.....	.....	65	18.3	94	NNE	3	1.3	.....	.....	10	.....	.....	0.2	5.	.....	.....	Threatening	
Naval Hospital, Yokohama,Japan	30.06*	763.5*	77	25.0	74.5	23.6	95	Calm	.....	.....	0	.....	0	.....	.....	0.10	2.5	.....	.....	Clear	
Adams. S. 41° 32′, W. 165° 19′	30.66	778.7	59	15.0	51	10.6	86	NE	.....	.....	1–3	.....	10	.....	NE	Blank	Blank	Mod'ate	SE	Cloudy	
Alliance, Villafranca, France	30.07‡	763.8‡	.....	.....	79	26.1	55	SE	.....	.....	1	.....	2	.....	NE	.....	.....	Light	S	Hazy	
Ashuelot. Yokohama, Japan	30.16	766.1	77	25.0	76	24.4	95	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	Smooth	.....	Hazy..	
Alaska. S. 47° 54′, W. 79° 14′	29.70	754.4	57	13.9	45	7.2	84	NNW	.....	.....	4	.....	2	.....	S	0.10	2.5	Mod'ate	NW	Squally	
Canonicus, New Orleans, La	29.97	761.2	51	10.6	73	22.8	90	W	.....	.....	7	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Colorado. New York, N. Y.	30.01‡	762.2‡	.....	.....	70	21.1	95	ENE	12	5.4	.....	.....	10	.....	NE	0.03	0.8	.....	.....	Foggy	
Constitution, Havre, France	30.16‡	764.5‡	.....	.....	65	18.3	100	NW	.....	.....	2	.....	10	.....	WNW	.....	.....	.....	.....	Misty	
Despatch, Volo, Turkey	30.11‡	764.8‡	.....	.....	84	28.9	54	SE	.....	.....	4	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Franklin, Norfolk, Va.	30.04	763.0	77	25.0	77	25.0	100	E	7.4	3.3	.....	.....	10	.....	E	0.22	5.6	.....	.....	Cloudy	
Gettysburg Villafranca, France	29.98‡	761.5‡	.....	.....	87	30.6	100	ESE	.....	.....	1–2	.....	2	.....	Calm	0	0	.....	.....	Clear	
Guard. Bahia, Brazil	30.20	767.1	78	25.6	76	24.4	77	E	....	.....	3	.....	8	.....	E	.....	.....	.....	.....	Cloudy	
Hartford. Rio de Janeiro, Brazil	30.06	763.5	.....	.....	74	23.3	80	NNW	4.8	2.1	.....	.....	0	.....	.....	0	0	.....	.....	Hazy	
Marion, Naples, Italy	30.02	762.5	78	25.6	79	26.1	70	Calm	.....	.....	0	.....	10	.....	Calm	Mod'ate	Mod'ate	.....	.....	Cloudy	
Michigan, Lake Erie	29.98†	761.5†	.....	.....	59	15.0	97	NNW	.....	.....	8	.....	10	.....	NNW	.....	.....	.....	.....	Light rain	
Monocacy. Ura-no-go-ura, Japan	30.08‡	764.0‡	.....	.....	75	23.9	86	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....	.....	Clear	
New Hampshire, Port Royal, S. C.	29.56†	750.8†	.....	.....	78	25.6	95	ESE	17	7.6	.....	.....	10	.....	SSW	2.05	52.1	.....	.....	Raining	
Onward, Callao, Peru	30.12†	765.0†	.....	.....	63	17.2	89	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.12	765.0	72	22.2	71	21.7	95	NE	.....	.....	4	.....	8	.....	WSW	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China	30.04	763.0	.....	.....	68	20.0	60	N	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. New York, N. Y.	30.11	764.8	71	21.7	71	21.7	95	NE	.....	.....	2–3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Ranger. Hong-Kong, China	29.92	760.0	84	28.9	84	28.9	83	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	.....	.....	Fair	
Rio Bravo, Brownsville, Texas	30.09	764.3	66	18.9	66	18.9	89	NW	.....	.....	5	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	29.94‡	760.5‡	.....	.....	71	21.7	95	ESE	.....	.....	2	.....	10	.....	ESE	0	0	.....	.....	Cloudy	
Saratoga, Delaware River	30.08*	764.0*	.....	.....	71	21.7	55	NE	.....	.....	1	.....	10	.....	SW	Slight	Slight	.....	.....	Overcast	
St. Louis, League Island, Pa	29.97	761.2	73	22.8	72	22.2	90	NE	2	0.9	.....	.....	10	.....	NE	0	0	.....	.....	Cloudy	
Supply, Havre, France	30.19	766.8	67	19.4	66	18.9	84	NW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
Swatara, Boston, Mass.	30.12‡	765.0‡	.....	.....	67	19.4	95	NE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Trenton, Southampton, England	30.10‡	764.5‡	.....	.....	66	18.9	89	NW	.....	.....	3	.....	8	.....	N;W	1.7	43.	.....	.....	Cloudy	
Tuscarora, La Paz, Mexico	29.69	754.1	80	26.7	81	27.2	87	S	.....	.....	0–1	.....	2	.....	Calm	0.5	13.	.....	.....	Clear	
Vandalia, Villafranca, France	30.06‡	763.5‡	.....	.....	80	26.7	70	ESE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.12‡	765.0‡	.....	.....	65	18.3	100	NE	8	3.6	.....	.....	10	.....	NE	0.28	7.1	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 42° 30′, W. 125° 00′		30.21*	767.3*				S			1		Fog				Smooth		Fair	Capt. Seabury.
S. S. City of Peking, N. 36° 10′, W. 163° 26′		30.08†	764.0†	72	22.2	76	W	10	4.5			7		NW	Mod'ate	Small	WSW	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 33° 28′ W. 120° 28′		29.98†	761.5†	64	17.8	94	NW			3		0			0	Small	WNW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 44° 02′, W. 124° 47′		30.09†	764.3†	57	13.9	81	N			1		0			0	Small	W	Foggy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 25° 21′, E. 120° 11′		29.74*	755.4*	79	26.1	82	NNE			6		n		NE		Rough	NE	Squally	Capt. L. Myer.
S. S. Gaelic, N. 30° 00′, E. 129° 00′		29.77†	756.1†	84	28.9	96	NW			4		8		NW	Heavy	Swell	Confused	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 45° 17′, W. 44° 51′		30.49	774.4	66.9	19.4	79	N			4		2		NNE		3	NNE	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.			CHARACTER.	DIRECTION FROM—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Philadelphia, Pa		30.04*	763.0*	70	21.1	95	NNE			2		10		NE	0			Cloudy	Captain Sargent.
S. S. Ohio, N. 51° 48', W. 7° 47'		30.27	768.8	67	19.4	79	NNE			3		4		NNE	0	None		Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 09', W. 69° 51'		29.95	760.7	83	28.3	79	S	10	4.6			2k		S	0	8well	S	Clear	Capt. James Jorgensen.
Schooner Florence, Niantic		29.97*	761.2*	31.0	—0.6		SE			2		10s			0.1 in or 3. mm.			Snowing	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 13, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	29.93	760.3	70.5	21.4	86	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	29.99	761.7	80.4	26.9	71	NE	.....	.....	6	.....	1	.....	.....	0	0	Very fair	Kesxuche.
Algiers	.....	.....	29.93	760.2	70.5	26.4	79	WNW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Tourillere.
La Calle	.....	.....	29.95	760.8	76.6	24.8	79	NW	.....	.....	3	.....	9	.....	.....	0.028	0.7	Covered	Foufrede.
Tunis	.....	.....	29.95	760.8	78.1	25.6	73	W	.....	.....	4	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.03	762.7	80.6	27.0	.....	W	.....	.....	3	.....	4	.....	.....	0.157	4.0	Cloudy	Gau.
Saida	.....	.....	29.96	761.0	74.5	23.6	83	N	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Herbin.
Tebessa	.....	.....	29.97	761.3	71.6	22.0	44	W	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	29.97	761.2	75.0	23.9	47	NNE	.....	.....	0	.....	5	.....	.....	0.039	1.0	Cloudy	Brugniaux.
Laghouat	.....	.....	30.02	762.6	78.1	25.6	43	Calm	.....	.....	0	.....	1	.....	.....	0.697	17.7	Very fair	Bertrand.
Biskra	.....	.....	30.00	762.0	88.5	31.4	26	SW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.39	746.6	29.92	759.9	76.5	24.7	65	NE	.....	.....	1	.....	1	.....	.....	0.205	5.2	.....	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.20	741.6	29.93	760 2	76.6	24.8	61	WNW	.....	.....	2	.....	3	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.10	739.0	29.94	760.4	78.8	26.2	64	SE	.....	.....	3	.....	3c	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.73	729.7	29.93	760.3	72.5	22.5	69	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.59	726.1	30.01	762.2	75.2	24.0	57	SE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.60	726.3	29.88	758.9	72.3	22.4	71	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	28.96	735.6	29.91	759.6	72.9	22.7	69	SE	.....	.....	1	.....	6	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.83	757.6	29.94	760.4	78.1	25.6	63	SW	.....	.....	1	.....	1ks	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.56	750.7	30.00	762.0	78.8	26.0	52	S	.....	.....	3	.....	4	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.67	753.6	29.94	760.4	78.6	25.9	55	S	.....	.....	1	.....	2	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.85	758.3	29.96	760.9	77.0	25.0	58	NW	.....	.....	1	.....	0	.....	.....	0	0	Fair	P. Busin.
Vienna	29.25	742.9	29.93	760.3	76.1	24.5	59	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Passau.
Brussels	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.80	756.9	29.90	759.4	63.8	17.7	.....	SE	12	5.4	.....	.....	3	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	30.00	762.0	30.02	762.5	62	16.7	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.09	764.3	61.5	16.4	.....	SSW	10	4.5	.....	.....	6	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.12	765.0	59.0	15.0	.....	W	15	6.7	.....	.....	4	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.63	752.6	30.03	762.7	62.0	16.7	.....	W	.....	.....	2	.....	0	.....	.....	0.02	0.5	Blue sky.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	84.5	29.2	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.10	764.5	68.0	20.0	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	30.11	764.8	63.0	17.2	.....	NW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	29.97	761.2	30.10	764.5	63.2	17.3	.....	W	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.67	728.2	30.13	765.3	59.0	15.0	.....	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	30.04	763.0	30.07	763.8	64	17.8	.....	WSW	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	30.04	763.0	30.06	763.5	61	16.1	.....	NNE	.....	.....	3	.....	4	.....	.....	.....	.....	½ clouded..	J. Costello.
Eccles, (near Manchester)	.....	.....	30.10	764.5	62.8	17.1	.....	NW	4.0	1.8	.....	.....	7	.....	.....	.....	.....	D. clouds.....	Thomas Mackereth.
Falmouth, Observatory	29.98	761.5	30.21	767.1	62.8	17.1	.....	W	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.67	702.8	29.98	761.5	60.0	15.6	.....	SE	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.63	753.9	29.91	759 7	81	27.2	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	30.07	763.8	59	15.0	.....	NW	.....	.....	3	.....	9	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.91	759.7	29.97	761 2	.....	.....	.....	NE	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.79	756.7	29.99	761.7	59.2	15.1	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	30.07	763.8	30.08	764.0	61	16.1	.....	NNE	.....	.....	3	.....	3	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.93	760.2	30.10	764.5	64.5	18.1	.....	N	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	29.94	760.5	30.16	766.1	62	16.7	.....	NNW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.23	767.8	65	18.3	.....	N	.....	.....	1	.....	2c	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	30.08	764.0	30.13	765.3	60	15.6	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.90	759.4	30.20	767.1	62.1	16.7	.....	N	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds..	J. Fisher.
Kew, Observatory	30.07	763.8	30.11	764.8	61.8	16.6	.....	NW	5	2.2	.....	.....	1	.....	.....	.....	.....	Blue sky.....	The Staff.
Kingstown	30.13	765.3	30.16	766.1	60	15.6	.....	WNW	.....	.....	4	.....	3	.....	.....	.....	.....	Blue sky.....	George Mitchell.
Leicester, Museum	.....	.....	30.10	764.5	62.0	16.7	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.03	762.7	30.10	764.5	80.6	27.0	.....	SW	.....	.....	1	.....	2ck	.....	.....	.....	.....	D. clouds.....	Sergt. Beckett.
Nairn	29.80	756.9	29.88	758.9	60	15.6	.....	SW	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.96	761.0	86.0	30.0	.....	SE	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds..	C. S. Duncombe.
Nottingham, Observatory	29.91	759.7	30.10	764.5	65.0	18.3	.....	NNW	.....	.....	1	.....	1ck	.....	WNW	0	0	Blue sky..	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.59	751.6	30.11	764.8	60.0	15.6	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.12	765.0	61	16.1	.....	WNW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	H.E. Bellamy.
Plymouth	30.10	764.5	30.17	766.3	63.8	17.7	.....	SW	.....	.....	4	.....	0	.....	.....	.....	.....	Blue sky.....	John Merrifield.
Roche's Point	30.13	765.3	30.17	766.3	66	18.9	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	30.02	762.5	30.18	766.6	60	15.6	.....	WNW	.....	.....	1	.....	1	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys.	.....	.....	29.80	756.9	56	13.3	.....	SW	31	13.9	.....	.....	10	.....	.....	.....	.....	Overcast.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.94	760 5	79.2	26.2	.....	NE	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	29.82	757.4	30.09	764.3	64.9	18.3	.....	SW	.....	.....	2	.....	1	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth Rectory	30.03	762.7	30.06	763.5	66.0	18.9	61	W	.....	.....	3	.....	0	.....	.....	0.150	3.81	Blue sky.....	C. Edith Redford.
Stonyhurst, Observatory	29.71	754.6	30.12	765.0	59.0	15.0	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	29.86	758.4	30.08	764.0	63.9	17.7	.....	NW	.....	.....	1	.....	4	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.82	757.4	60	15.6	.....	WSW	.....	.....	4	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.21	767.3	67	19.4	.....	N	.....	.....	6	.....	4	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	.....	.....	30.18	766.6	61.3	16.3	.....	SW	17	7.6	.....	.....	8	.....	.....	.....	.....	D. clouds.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.74	755.4	53.0	11.7	77	NW	.....	.....	*2	.....	10k	.....	.....	0	0	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.5	73.2	22.9	79	E	23.0	10.3	.....	0	8	.....	.....	0.06	1.5	Squally.....	C. Meldrum.
Melbourne, Observatory	29.83	757.7	29.92	759.9	52.8	11.4	82	NE	8	3.6	.....	.....	2	.....	.....	0	0	Heavy dew..	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 30° 10', W. 23° 15'	0	.....	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 39° 30', W 67° 20'	4	ESE; s	D. clouds.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
.....	.....	.....	.....	.....
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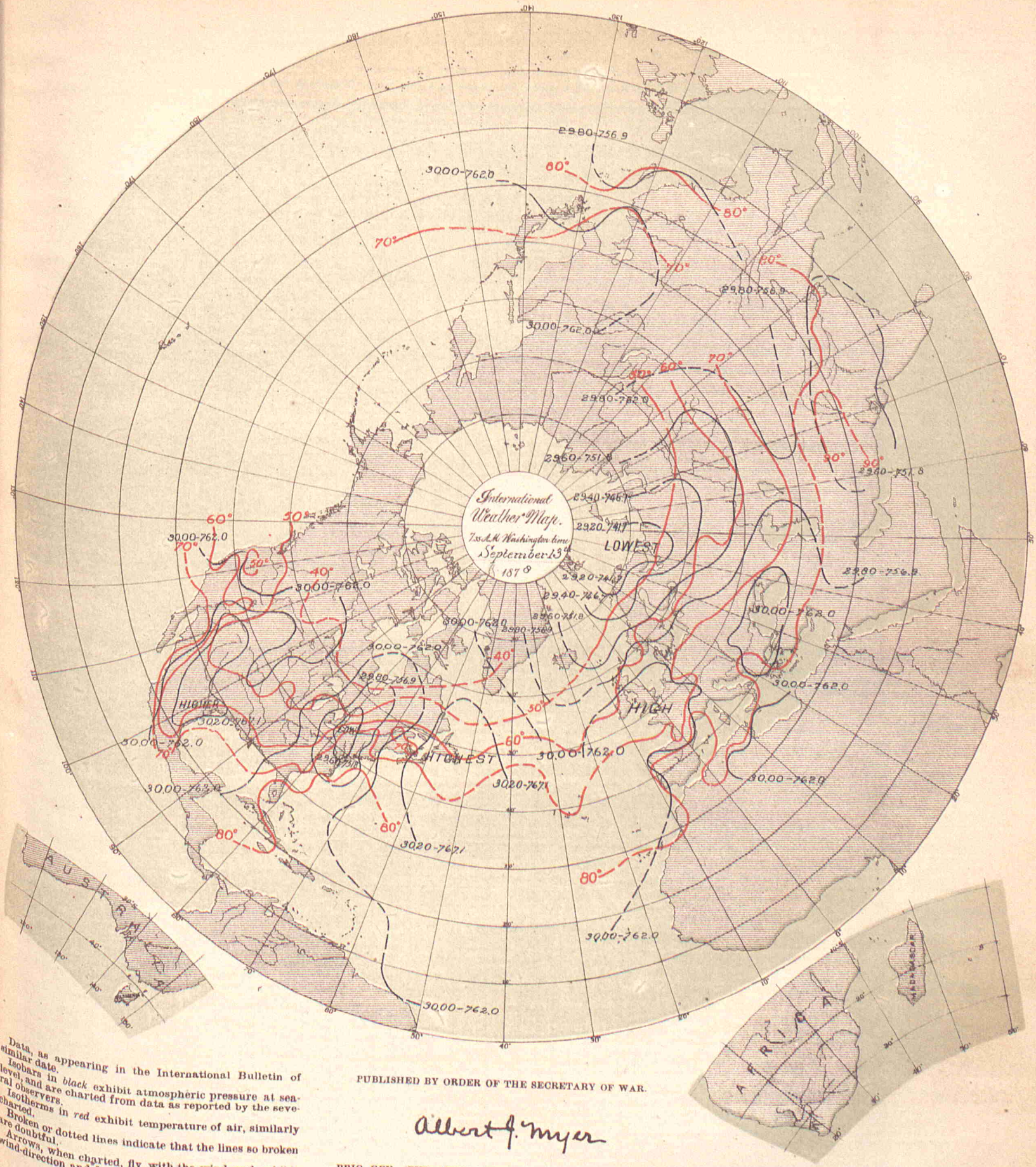
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.24	666.5	.....	.....	67.1	19.5	95	SE	.....	.....	1	.....	10s	.....	.....	0.7	18.	.....	Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.89	759.2	29.94	760.4	61.2	16.2	57	NNW	.....	.....	4	.....	1	.....	.....	.....	.....	.....	
Farôe	29.97	761.1	29.98	761.6	61.0	16.1	63	W	.....	.....	4	.....	1	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Farôe)	29.50	749.3	29.54	750.2	50.9	10.5	56	W	.....	.....	6	.....	7	.....	.....	.....	.....	.....	
Vestervig	29.74	755.3	29.91	759.6	61.9	16.6	69	W	.....	.....	4	.....	3	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.65	753.1	30.20	767.1	59 7	15.4	91	NE	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.84	757 9	29.92	759.9	82.9	28.3	44	NNW	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.51	749.5	30.07	763.6	57.0	13.9	80	NNW	.....	.....	2	.....	10n	.....	.....	0	0	Covered	C. Saillard.
Beaumette Obs'y (Anvers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.78	756.5	30.07	763.8	59.2	15.1	75	NNW	.....	.....	2	.....	10	.....	N	0.010	0.25	Covered	Frere Eugene Marie, Director.
Besançon	29.12	739.7	30.00	761.9	65.3	18.5	53	SW	.....	.....	2	.....	2	.....	W	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.58	751.4	30.13	765.3	60.8	16	58	N	.....	.....	1	2c	.....	N	.....	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.89	759.3	30.14	765.5	65.1	18.4	55	NE	.....	.....	2	.....	2k	.....	NE	6	0	.....	The Staff.
Carcassonne, Normal School	29.56	750.9	29.96	760.9	78.8	26	53	N	.....	.....	1	.....	5	E	NE	0	0	Cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.51	749.5	30.06	763.5	73.0	22.8	84	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.71	754.7	30.03	762.8	56.5	13.6	91	SW	.....	.....	3	.....	8	NW	NW	0.138	3.5	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs'y	28.72	729.5	30.07	763.6	60.8	16.0	73	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.18	741.2	30.06	763.4	55.4	13	77	W	.....	.....	3	.....	5kn	.....	W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Gréasque*	28.84	732.6	29.98	761.6	83.3	28.5	39	NW	.....	.....	3	.....	5	S	.....	0	0	⅗ cloudy	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.06	763.5	30.27	768.9	63.7	17.6	82	NW	.....	.....	3	.....	0	.....	.....	0	0	Clear	Monillot, Director.
Le Mans, Normal School	29.82	757.4	30.13	765.2	62.2	16.8	53	N	.....	.....	4	.....	2	.....	N	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.15	740.4	30.05	763.2	66.6	19.2	79	N	.....	.....	4	.....	5	.....	NW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.09	764.3	30.13	765.2	66.4	19.1	79	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	M. Galzin, Director.
Mirecourt, Normal School	29.00	736.7	30.04	762.9	60.6	15.9	62	NW	.....	.....	1	.....	5kn	.....	SW	0	0	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.68	753.8	29.89	759.2	86.4	30.2	64	N	.....	.....	1	.....	2k	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.95	735.2	29.97	761.1	76.3	24.6	51	N	.....	.....	1	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.23	640.8	.....	.....	46.8	8.2	100	NE	.....	.....	1	.....	.....	.....	.....	0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.08	764.0	30.11	764.8	71.6	22.0	58	N	.....	.....	3	.....	10	N	N	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	30.01	762.3	30.10	764.5	61.2	16.2	68	NW	.....	.....	2	.....	10	.....	N	0.039	1.0	Covered	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.16	766.1	61.0	16.1	59	N	.....	.....	2	.....	1	.....	N	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.01	736.8	30.08	763.9	64.4	18	80	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Hugnet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchès.
Lyons	.....	.....	30.09	764.2	64.2	17.9	77	.....	.....	.....	.....	.....	10	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.91	759.7	81.1	27.3	49	SW	.....	.....	1–2	.....	5	.....	.....	0	0	Cloudy	The Staff.
Mont-Louis	25.00	634.9	30.31	769.9	65.7	18.7	43	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.94	760.5	77.5	25.3	73	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.79	756.6	30.07	763.6	59.0	15.0	78	WNW	.....	.....	3	.....	10	.....	NNW	Inap.	Inap.	.....	Marié Davy, Director
Perpignan	.....	.....	29.98	761.4	80.6	27.0	50	N	18.6	8.33	.....	.....	1	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.65	575.4	.....	.....	58.3	14.6	.....	N	.....	.....	2	.....	2	.....	.....	0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	29.90	759.5	30.07	763.7	58.8	14.9	77	NW	.....	.....	2	.....	10	.....	NW	0	0	Covered	E. Renou.
Toulouse, Observatory	29.35	745.6	30.08	764.1	73.6	23.1	53	NW	.....	.....	3	.....	6	.....	.....	0	0	.....	The Staff.
Tours	29.89	759.2	30.09	764.2	66.2	19.0	50	NNE	.....	.....	1	.....	5	.....	N	0	0	.....	C. Marquet.
Versailles	.....	.....	30.08	764.1	59.7	15.4	61	N	.....	.....	3	.....	10	.....	.....	0.001	0.03	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.98	761.5	30.00	762.1	69.1	20.6	94	N	2.5	1.1	.....	cs	k	W	.....	0	0	Cloudy	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.96	760.9	69.8	21.0	61	W			2		3	W		0.028	0.7	Raining	Prof. Dr. Hoh.
Berlin	29.61	757.1	29.97	761.3	72.7	22.6	54	S			1		3			0	0		Prof. Arndt.
Breslau	29.45	747.9	29.98	761.4	76.8	24.9	38	WNW			2		3			0	0		Royal University Obs'y
Carlsruhe	29.64	752.9	30.07	763.6	63.7	17.6	86	WSW			1		10			0	0		Albert Senz.
Cassel	29 36	745.7	29.97	761.1	67.6	19.8	93	NW			2		8	NW		0.157	4.00		Dr. H. Möhl.
Crefeld	29.82	757.3	29.98	761.4	60.4	15.8	76	W			1		10			0.24	6.		Director Lose.
Emden	29.97	761.1	30.00	762.0	64.2	17.9	69	NE			4		6			0.035	0.9		Prof. Prestel.
Frankfort on the Main	29.63	752.6	29.98	761.6	66.4	19.1		SSW			2		8			0	0		Physical Society.
Friedrichshafen	28.56	725.5	29.96	760.9	67.1	19.5	79	WSW			3		9	SW		1.095	27.8		M. Wilhelm.
Hamburg	29.92	759.9	29.99	761.7	65.1	18.4	71	NE			2		9k			0	0		Captain F. Hegemann.
Kiel	29.97	761.3	29.99	761.7	62.2	16.8	62	NE			1		0			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.84	757.9	29.92	760.0	66.9	19.4	66	W			6		4			0	0		Prof. E. Luther.
Köslin			29.93	760.2	65.5	18.6							1			0	0		H. Müller.
Leipsic, Observatory	29.54	750.3	29.95	760.6	74.8	23.8	57	SE			2		7	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.85	758.2	29.90	759.4	64.9	18.3	72	NW			3		2s						Reinbrecht and Skalweit.
Neufahrwasser	29.92	760.0	29.94	760.4	66.7	19.3	73	NNE			2		6	WSW		0	0		A. Lothes.
Posen	29.73	755.1	30.01	762.2	72.5	22.5	41	NW			4		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.47	748.6	30.01	762.3	65.5	18.6	67	E			1		9	SW		0	0		Astronomical Observatory.
Stuttgart	29.03	737.4	29.95	760.7	64.4	18.0	69	N			1		10			0.031	0.8	Light rain	Prof. Schoder.
Treves, (Trier)	29.46	748.3	29.98	761.6	59.0	15.0	68	W			3		10			0.002	0.04	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.48	723.4	29.94	760.4	68.2	20.1	79	SW	1.6	0.7			9ck		W	0	0		Dr. Von Hebber.
Wustrow, Naval School	29.98	761.5	30.02	762.5	62.8	17.1	70	N			1		3			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.6	29.97	761.1	83.3	28.5		NE			2.0		k					Clear.	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the Coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.47	748.6	29.52	749.8	87.2	30.7	74	SW	24?	10.7?			0		SW	0	0	D. clouds	
Deesa	29.12	739.6	29.59	751.5	86.4	30.2	68	SSE					7			0	0	Blue sky	
Bombay	29.59	751.6	29.63	752.5	80.8	27.1	88	NW	13	5.8			10		NW	0.80	20.3	Overcast	
Poona	27.65	702.3	29.64	752.9	76.8	24.9	82	WSW					10		WSW	0.13	3.3	Overcast	
Lahore	28.76	730.5	29.47	748.6	96.2	35.7	52	Calm	0.8	0.4			2			0	0	Blue sky	
Belgaum	27.20	690.7	29.74	755.5	71.4	21.9	90	W	2	0.9			10		W	0.07	1.8	Showery	
Roorkee	28.66	727.9	29.55	750.5	80.2	26.8	80	SE	5	2.2			3			0.32	8.1		
Agra	28.99	736.4	29.54	750.4	87.7	30.9	71	E					2			0	0		
Nagpur	28.51	724.1	29.54	750.2	81.6	26.6	79	Calm	5.3	2.4			8		W	0.06	1.5		
Lucknow																			
Allahabad	29.22	742.3	29.63	750.0	83.1	28.4	86	Calm	1.4	0.6			6			0.49	12.4	D. clouds	
Patna	29.39	740.5	29.57	751.1	81.3	27.4	83	E	1.1	0.5			10	E	E	0.04	1.0	Overcast	
Hazaribagh	27.56	699.9	29.56	750.8	75.8	24.3	86	S	6.9	3.0			10			0.80	20.3	Thunder-storm.	
Cuttack	29.45	747.9	29.53	750.0	84.9	29.4	76	WNW	1.2	0.5			8			1.46	37.1	D. clouds	
Calcutta (Alipore)	29.54	750.4	29.56	750.9	79.7	26.5	96	E	4	1.8			10	E	E	0.11	2.8	Showery	
Goalpara	29.27	743.4	29.66	753.3	75.4	24.1	88	E	19.5	8.7			9			1.10	27.9	D. clouds	
Chittagong	29.53	750.2	29.63	752.5	80.5	26.9	96	Calm	2.7	1.2			10			0.80	20.3	Raining	
Sibsagar	29.42	747.2	29.75	755.7	74.1	23.4	97	ENE	5.2	2.3			10	W	W	0.88	22.4	Gloomy	
Jubbulpore	28.19	715.9	29.54	750.4	77.8	25.4	88	NW	1.2	0.5			10			0.80	20.3	Raining	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.56	750.9	29.96	761.0	78.8	26.0	39	SW	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.84	757.9	29.95	760.6	78.8	26.0	48	ESE	3.8	1.7	.....	.....	1	SE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.76	756.0	29.95	760.6	78.4	25.8	49	E	0	0	.....	.....	1	E	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.65	727.6	29.93	760.2	77.7	25.4	61	NW	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.40	746.7	29.89	759.3	78.3	25.7	57	E	.....	.....	4	.....	3	N	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.04	737.6	29.92	759.9	76.5	24.7	59	NE	3.1	1.4	.....	.....	9	S	.....	0.299	7.6	.....	Prof. P. F. Denza.
Mondovi	28.06	712.8	29.92	759.9	73.0	22.8	59	NW	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.72	755.0	29.94	760.5	76.8	24.9	66	E	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.75	755.6	29.91	759.8	79.5	26.4	50	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.62	752.3	29.93	760.1	79.3	26.3	45	E	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.63	752.6	29.88	758.9	85.1	29.5	32	S	.....	.....	2	.....	6	E	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.80	756.9	29.88	759.0	77.0	25.0	65	NW	6.9	3.1	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.91	759.7	29.96	760.9	73.0	22.8	63	SSW	.....	.....	.....	.....	7	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.44	722.4	29.95	760.8	69.1	20.6	66	SE	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.73	755.2	29.90	759.5	76.3	24.6	63	S	3.1	1.4	.....	.....	9	.....	.....	2.079	52.8	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.72	754.9	29.91	759.8	77.2	25.1	69	S	.....	.....	4	.....	10	SE	.....	0.906	23.0	.....	Prof. L. Palmieri.
Lecce	29.78	756.3	29.93	761.6	66.2	19.0	92	ESE	11.2	5.0	.....	.....	10	E	.....	0.059	1.5	.....	Prof. C. De Giorgi
Cagliari	29.73	755.1	29.91	759.8	73.2	22.9	72	SW	.....	.....	2	.....	10	SW	.....	0.528	13.4	.....	Prof. A. Pacinotti.
Cosenza	29.06	738.1	29.92	759.9	77.7	25.4	70	SW	.....	.....	1	.....	9	.....	.....	0.016	0.4	.....	Prof. F. D. Conti.
Palermo	29.68	753.8	29.93	760.1	79.2	26.2	55	ENE	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Prof. G. Cacelatore.
Syracuse	29.85	758.2	29.93	760.1	79.7	26.5	58	SW	1.8	0.8	.....	.....	9	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.39	746.4	29.91	760.5	73.0	22.8	77	ESE	1.8	0.8	.....	.....	8	E	.....	0.457	11.6	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.69	754.1	29.89	759.2	74.0	23.3	86	NE	3.3	1.5	.....	.....	9ck; cs	SW	NE	0	0	Fair	
Tokei (Yeddo) Observatory	29.97	761.2	30.03	762.7	74.5	23.6	89	S	3.0	1.3	.....	.....	10ck;s	.....	.....	0.020	0.51	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	29.91	759.7	30.00	762.1	74	23.3	93	NE	1	0.4	.....	.....	5ks	.....	.....	0.05	1.27	Fair	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico; and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.2	17.3	65	W	.....	.....	2	7c	3s	E	.....	0	0	Very cloudy	P. Ceballos.
Guadalajara	25.15	638.8	30.14	765.7	54 0	12.2	76	SE	.....	.....	1	0	10ks	.....	S	0	0	Covered	Prof. L. Perez.
Guanajuato	23.77	603.9	30.00	762.0	61.4	16.2	37	Calm	.....	.....	.....	7	0	.....	.....	0	0	Misty	F. Ortiz.
Leon	24.60	622.5	30.13	765.2	55.4	13.0	83	NW	.....	.....	1	8c	2s	SW	Calm	0	0	Covered	Prof. M. Leal.
Mexico	23.19	589.2	30.25	768.4	49.6	9.8	86	Calm	0	0	.....	0	10k	.....	NE	Inap.	Inap.	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	62.7	11.5	74	NNW	.....	.....	2	1c	2ks	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap.	Inap.	.....	Prof. B. Gonzalez.
Tlacotalpam	30.05	763.2	30.06	763.5	74.3	23.5	76	N	.....	.....	6	0	10n	.....	N	0.718	18.25	Threatening	M. M. Cházaro.
San Luis Potosi	24.28	616.1	30.25	768.9	49.0	9.4	75	E	3.1	0.4	.....	4	5	W	E	0	0	Covered...	G. Barroeta, M. D.
Vera-Cruz	30.13	765.2	30.16	765.9	77.0	25.0	67	NW	2.9	1.3	.....	.....	10n	.....	.....	0.528	13.4	Covered	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	53.6	12.0	82	NE	.....	.....	2	0	3	.....	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.5	30.04	763.1	60.6	10.3	78	NNW	3.6	1.6	.....	3	3	Calm	Calm	0	0	Misty	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.34	719.8	29.96	760.9	79.2	26.2	82	S	1.6	0.8	.....	0	10	.....	.....	0.040	1.0	Covered	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.6	30.02	762.6	65.3	18.5	.....	NE	.....	.....	3	.....	.....	.....	.....	0.118	3.0	.....	
Groningen	29.93	760.3	29.93	761.7	61.7	16.5	.....	NE	.....	.....	2	.....	.....	.....	.....	0.091	2.3	.....	
Helder	30.00	761.9	30.00	761.9	61.7	16.5	.....	NNE	.....	.....	4	.....	.....	.....	.....	0.130	3.3	.....	
Hellevoetsluis	29.98	761.6	29.98	761.6	65.7	18.7	72	NE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.96	760.9	30.00	762.1	61.3	16.3	89	NNW	.....	.....	2	.....	8	.....	.....	0.126	3.2	Very cloudy	H. v d Bruk

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.75	755 7	29.81	757.1	57.2	14.0	90	SW	21.5	9.6	.....	.....	10	.....	.....	0.906	23.0	Light rain...	
Brönö	29.36	745.8	29.40	746.8	53.2	11.8	96	SW	18	8	.....	.....	10	.....	.....	1.016	25.8	.....	
Christiania	29.60	751.7	29.74	755.3	63.5	17.5	52	WSW	9	4	.....	.....	7	.....	.....	0.008	0.2	.....	
Tromsö	29.14	740.1	29.18	741.2	43.9	6.6	59	SW	7	3	.....	.....	8	.....	.....	0.126	3.2	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.80	756.8	29.98	761.6	70.5	21.4	92	SSE	4.9	2.2	.....	.....	7	.....	.....	1.850	47.0	.....	Dr. J. A. Sampaio.
Campo Major	29.01	736.9	29.97	761.3	69.1	31.7	35	ESE	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.6	30.07	763.8	77.7	25.4	63	SW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.65	753.2	30.00	762.0	79.9	26.6	50	SW	9.8	4.4	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.96	761.0	30.03	762.8	77.0	25.0	76	S	13.0	5.8	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 40° 28', W. 19° 44'	.....	.....	30.15	765.9	75.2	24	.....	SE	.....	.....	2	.....	6	SW	W	2	.....	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03', E. 12° 02'	.....	.....	29.96	761.0	74.3	23.5	.....	WSW	.....	.....	2	.....	0	.....	.....	2	WSW	Blue sky.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	29.95	760.6	68.2	31.2	.....	NNW	.....	.....	2	.....	7	.....	NNW	3	SSE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	29.94	760.4	75.2	24.0	.....	NW	.....	.....	1	.....	10	.....	Calm	1	.....	Rain & fog..	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.75	755.7	80.6	27.0	.....	NW	.....	.....	3	.....	4	.....	NW	1	.....	D. clouds.....	M. T. Guimaraes, Com'd't.

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.52	749.7	29.93	760.2	72.9	22.7	52	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.48	748.9	29.89	759.2	66.0	18.9	63	W	2	1	.....	.....	4	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.54	750.3	29.78	756.3	59.7	15.4	49	WNW	9	4	.....	.....	2ck	.....	.....	.....	.....	Heavy clouds..	Prof. Dr. Weihranch.
St. Petersburg	29.62	752.4	29.64	752.8	55.8	13.2	62	WNW	11	5	.....	.....	1k	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.27	743.4	29.88	758.9	70.2	21.2	47	NW	9	4	.....	.....	1c	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.97	761.1	30.04	762.9	75.2	24.0	48	NNW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.07	763.6	30.08	764.1	73.0	22.8	75	NNE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.11	739.3	29.64	752.8	61.5	16.4	69	SW	7	3	.....	.....	6ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.73	755.1	29.93	760 2	68.0	20.0	41	W	9	4	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.08	738.6	29.10	739.1	50.2	10.1	98	ESE	13	6	.....	.....	10	.....	.....	.....	.....	Raining.....	Capt. Sseliwerstow.
Tiflis	28.58	725.8	29.94	760.5	74.3	23.5	33	NW	18	8	.....	.....	1cs	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.99	761.8	29.91	759.7	64.4	18.0	52	Calm	0	0	.....	.....	9k	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Krotkowo*	29.11	739.4	29.57	751.1	58.8	14.9	66	W	11	5	.....	.....	9ks	.....	.....	.....	.....	.....	Cand. Fajanow.
Kasan	29.29	743.9	29.55	750.5	60.3	15.7	68	WSW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.49	723.7	29.41	747.1	54.5	12.5	79	NW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.55	750.5	29.78	756.3	65.3	18.5	63	NNW	9	4	.....	.....	9ks	.....	.....	.....	.....	.....	
Tashkend	28.19	716.0	29.82	757.5	73.6	23.1	53	S	4	2	.....	.....	9	.....	.....	.....	.....	Light clouds	Teich, A. M.
Barnaul	29.08	738.7	29.59	751.6	60.3	15.7	76	SW	0	0	.....	.....	10	.....	.....	.....	.....	Raining.....	Meteorological Obs.
Yeniseisk	29.41	746.9	29.69	754.2	49.1	9.5	70	E	2	1	.....	.....	7	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.90	759.5	30.04	763.1	63.0	17.2	70	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.85	758.2	29.95	760.8	81.5	27.5	58	S	1.8	0.8	.....	.....	3c	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.03	762.7	30.08	764.1	75.2	24.0	64	N	2.4	1.07	.....	3	4	SE	.....	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.6	.....	.....	70.2	21.2	65	NE	8.6	3.86	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.83	706.8	29.91	759.7	89.1	31.7	43	SW	3.0	1.33	.....	5	0	N	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.84	757.8	29.98	761.4	83.9	21.6	43	WNW	5.2	2.31	.....	.....	.....	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.10	739.0	29.95	760.8	78.1	25.6	70	ESE	7.4	3.33	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.89	759.2	29.95	760.8	78.2	25.7	89	Calm	0	0	.....	2c	0	.....	.....	0.795	20.2	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.90	759.4	29.99	761.8	85.8	29.9	47	ESE	9.1	4.1	.....	0	6	.....	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.85	758.2	29.94	760.5	82.8	28.2	89	E	0	0	.....	6c	3k	E	E	0.157	4.00	D. clouds.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.43	747.6	29.47	748.6	49.6	9.8	.....	SW	.....	.....	4	.....	0	.....	.....	0.236	6.0	.....	.....
Umea	29.50	749.4	29.56	750.7	52.2	11.2	73	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	.....
Hernosand	29.53	750.0	29.58	751.3	57.9	14.4	57	SSW	.....	.....	4	.....	5	.....	.....	0	0	.....	.....
Stockholm	29.61	752.0	29.78	756.5	59.9	15.5	56	WSW	.....	.....	2	.....	2	.....	.....	0.079	2.0	.....	.....
Wisby	29.75	755.7	29.81	757.2	59.0	15.0	76	WNW	.....	.....	6	.....	0	.....	.....	0	0	.....	.....
Sub-Series.																			
Upsala	29.67	753.5	29.74	755.4	60.6	15.9	60	SW	13.2	5.9	.....	.....	5	.....	.....	0.001	0.02	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.8	29.95	760.8	71.1	21.7	59	SSW	.....	.....	1	.....	9	.....	.....	0	0	Covered	The Observatory.
Zurich	28.40	721.4	30.02	762.4	60.4	15.8	95	N	.....	.....	1	.....	10	.....	.....	0.425	10.8	Raining	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.3 mm.; Thermometer, +3.2 cent.; Relative Humidity, —3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.01	762.3	72.1	22.3	48	NE	20	9.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.08	763.9	85.1	29.5	.....	S	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.72	754.9	29.83	757.6	86.9	30.5	60	W	.....	.....	2	.....	3c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.98	761.5	30.05	763.3	69.9	21.1	94	SW	8	3.6	.....	.....	10n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Brockville, Ontario	29.45	748.0	29.74	755.4	67	19.4	.....	NE	5	2.2	.....	2c	5s	SW	SW	0.23	5.8	Fair	W. R. Bigg.
*Chatham, N B	30.03	762.7	30.09	764.3	72	22.2	97	S	7	3.1	.....	.....	10n	.....	S	0.47	11.9	Light rain	G. A. Blair.
Charlottetown, P. E. Island	30.16	766.1	30.20	767.1	71	21.7	88	S	14	6.3	.....	.....	8s	.....	Calm	0.060	1.52	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.54	750.3	29.72	754.9	70.5	21.4	96	E	.....	.....	1	7cs	3s	.....	.....	0.013	0.33	Clearing	James Smith, M. A.
Dalhousie, N. B	29.89	759.2	30.05	763.3	66.6	19.2	100	E	.....	.....	1	.....	.....	.....	.....	0.37	9.4	Overcast	H. A. Johnson.
Esquimault, B. C	29.93?	760.2?	29.78?	756.4?	50.3	10.2	100	NE	.....	.....	.....	.....	10	.....	.....	0	0	Overcast	W. H. Bevis.
*Father Point, Quebec	29.91	759.7	29.93	760.2	72	22.2	89	S	30	13.4	.....	.....	10n	.....	S	Inap.	Inap.	Light rain	J. McWilliams.
Fredericton, N. B	30.07	763.8	30.13	765.3	69.0	20.6	91	S	4	1.8	.....	.....	10n	.....	.....	0.187	4.75	Foggy	Prof. Harrison.
*Fort Garry Manitoba	29.07	738.4	29.89	759.2	46	7.8	84	S	12	5.4	.....	0	Haze	.....	S	0	0	Hazy	James Stewart.
Granton, Ontario	28.48	723.4	29.56	750.8	53	11.7	100	N	.....	.....	2	.....	10n	.....	.....	2.15	54.6	Raining	James Grant.
*Halifax, N. S	30.08	764.0	30.21	767.3	70	21.1	97	S	13	5.8	.....	.....	10n	.....	S	0.214	5.43	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.69	738.9	29.45	748.0	57.9	14.4	94	NE	.....	.....	1	.....	10s	.....	E	4.13	104.9	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.34	770.6	30.37	771.4	60	15.6	88	SW	.....	.....	1	0	1ks	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.34	745.2	29.67	753.6	61	16.1	95	E	16	7.2	.....	.....	10ks	.....	Calm	0.03	0.8	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.25	768.3	30.29	769.4	68.0	20.0	88	S	12	5.4	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	29.66	753.4	29.85	758.2	74	23.3	86	S	9	4.0	.....	5k	2ks	S	.....	0.02	0.5	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.90	734.0	29.59	751.6	48	8.9	100	N	24	10.7	.....	.....	10n	.....	N	2.18	55.4	Heavy rain	Rev. R. Mosley.
Peterboro, Ontario	28.84	732.5	29.56	750.8	61.7	16.5	94	E	.....	.....	3	0	10n	.....	.....	3.20	81.3	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	28 88	733.5	29.56	750.8	55	12.8	100	NW	16	7.2	.....	.....	10n	.....	NE	3.57	90.7	Heavy rain	H. Morgan.
Port Hastings, N. S	30.24	768.1	30.28	769.1	66.4	19.1	.....	S	5	2.2	.....	.....	.....	.....	.....	0	0	Cloudy	Peter Grant.
Port Stanley, Ontario	28.92	734.6	29.55	750.6	54	12.2	93	NW	20	8.9	.....	.....	10n	.....	NW	3.15	80.0	Light rain	M. Payne.
*Quebec, Quebec	29.66	753.4	29.97	761.2	65	18.3	100	E	.....	.....	3	.....	10n	.....	E	0.04	1.0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.36	745.7	29.82	757.4	60	10.0	93	NE	8	3.6	.....	.....	10s	.....	NE	1.18	30.0	Heavy rain	W. H. McIntyre.
St. Andrews, N. B	30.08	764.0	30.13	765.3	62	16.7	97	Calm	0	0	.....	.....	Fog	.....	.....	0.43	10.9	Foggy	Dr. Gove.
St. John, N. B	29.99	761.7	30.15	765.8	63	17.2	94	S	12	5.4	.....	.....	10n	.....	.....	1.47	37.3	Raining	G. Murdock, C. E.
*Saugeen, Ontario	28.98	736.1	29.68	753.9	52	11.1	99	N	34	15.2	.....	.....	10ks	.....	N	0.69	17.5	Light rain	K. Stewart.
Stayner, Ontario	28.78	731.0	29.54	750.3	51	10.6	100	NW	16	7.2	.....	.....	10n	.....	NW	4.03	102.4	Heavy rain	R. J. Cole.
Stratford, Ontario	28.29	718.6	29.54	750.3	52.1	11.2	98	NW	16	7.2	.....	.....	10n	.....	.....	2.826	71.78	Heavy rain	C. J. MacGregor, M. A.
*Sydney, C. B	30.29	769.4	30.32	770.1	66	18.9	93	SW	7	3.1	.....	.....	10n	.....	SW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.07	738.4	29.43	747.5	66	18.9	98	E	24	10.7	.....	.....	10n	.....	E	3.19	81.0	Heavy rain	Magnetic Observatory.
Windsor, N. S																			Prof. John E. Orair.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	67.0	19.4	79	S	.....	.....	.....	2k	2s	.....	.....	0	0	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.58	751.3	29.79	756.7	77	25.0	77	SE	8	3.6	.....	5c	1ks	S	Calm	0.03	0.8	Fair	
Alpena, Michigan	29.26	743.2	29.89	759.2	54	12.2	61	N	10	4.5	...	.....	10ks	.....	N	0	0	Threatening	
Atlantic City, New Jersey	29.76	755.9	29.78	756.4	76	24.4	90	SE	32	14.3	.....	.....	10ks	.....	SE	0	0	Threatening	
Augusta, Georgia	29.68	753.9	29.86	758.4	65	18.3	84	W	6	2.7	.....	Haze	0	.....	.....	0.39	9.9	Clear.	
Baltimore, Maryland	29.53	750.0	29.68	753.3	75	23.9	95	SE	17	7.6	.....	.....	10n	.....	SE	0.18	4.6	Heavy rain	
Barnegat, New Jersey	29.77	756.1	29.79	756.7	76	24.4	91	SE	30	13.4	.....	2c	Fog	S	SE	0	0	Fair	
Bismarck, Dakota	28.63	711.9	29.88	758.9	44	6.7	84	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boerne, Texas	28.72	729.5	.....	.....	71	21.7	45	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.	
Boise City, Idaho	27.12	688.8	30.08	764.0	51	10.6	52	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Boston, Massachusetts	29.85	758.2	30.00	762.0	69	20.6	100	SE	4	1.8	.....	.....	Fog	.....	E	0.41	10.4	Dense fog	
Brackettville, Texas	29.02	737.1	30.05	763.3	60	15.6	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.95	735.3	29.96	761.0	43	6.1	83	SE	16	7.2	.....	5cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.14	765.5	30.20	767.1	63	17.2	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	28.72	729.5	29.37	746.0	69	20.6	95	E	12	5.4	.....	.....	10n	.....	SE	2.05	52.1	Light rain	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.63	752.6	29.87	758.7	75	23.9	76	SE	8	3.6	.....	1c	0	Calm	.....	Inap.	Inap.	Clear	
Cairo, Illinois	29.66	753.4	30.05	763.3	57	13.9	69	NW	6	2.7	.....	2ck	0	NW	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	55	12.8	56	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.31	642.9	30.11	764.8	62	16.7	32	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.87	682.5	30.36	771.1	62	16.7	46	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	46	7.8	77	E	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cape Hatteras, N. Carolina	29.68	753.9	29.69	754.1	78	25.6	91	SW	26	11.6	.....	.....	10n	.....	SW	2.27	57.7	Light rain	
Cape Henry, Virginia	29.64	752.8	29.67	753.6	76	24.4	82	NE	20	8.9	.....	.....	10s	.....	SE	0.80	20.3	Cloudy	
Cape Lookout, N. Carolina	29.76	755.9	29.78	756.4	80	26.7	82	SW	30	13.4	.....	2c	5ks	NE	SW	1.40	35.6	Cloudy	
Cape May, New Jersey	29.71	754.6	29.74	755.4	76	24.4	90	SE	28	12.5	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Castroville, Texas	29.37	746.0	30.09	764.3	53	11.7	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	29.82	757.4	29.89	759.2	69	20.6	75	W	12	5.4	.....	0	0	.....	.....	0.77	19.6	Clear	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	47	8.3	41	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.30	744.2	29.99	761.7	49	9.4	78	NW	5	2.2	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Cincinnati, Ohio	29.25	742.9	29.89	759.2	56	13.3	81	NW	7	3.1	.....	.....	9ks	.....	NW	0.61	15.5	Clearing	
Cleveland, Ohio	28.93	734.8	29.62	752.3	58	14.4	88	W	40	17.9	.....	.....	10n	.....	NW	3.63	92.2	Heavy rain	
Coleman City, Texas	28.33	719.6	29.99	761.7	57	13.9	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	28.95	735.3	29.76	755.9	54	12.2	93	W	16	7.2	.....	.....	10n	.....	W	1.14	29.0	Light rain	
Conceo, Texas	28.21	716.5	29.80	756.2	53	11.7	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.69	754.1	30.17	766.3	55	12.8	74	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.48	748.8	30.13	765.3	45	7.2	76	Calm	0	0	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.97	735.8	30.15	765.8	57	13.9	63	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.34	745.2	30.14	765.5	56	13.3	75	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.84	630.9	30.06	763.5	48	8.9	43	SE	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Des Moines, Iowa	29.24	742.7	30.12	765.0	50	10.0	65	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Detroit, Michigan	29.09	738.9	29.74	755.4	53	11.7	86	N	14	6.3	.....	.....	10n	.....	N	0.70	17.8	Light rain	
Dodge City, Kansas	27.40	696.0	29.79	754.4	47	8.3	85	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.42	747.3	30.14	765.5	43	6.1	75	NE	1	0.4	.....	0	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.43	747.5	30.11	764.8	46	7.8	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.40	746.7	30.16	766.1	54	12.2	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.05	763.3	30.12	765.0	63	17.2	94	.....	8	3.6	.....	.....	10n;fg	.....	Calm	0.58	14.7	Light rain	
Edinburg, Texas	.....	.....	.....	.....	58	14.4	94	W	.....	.....	1	2c	2s	Calm	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	67	19.4	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Erie, Pennsylvania	28.76	730.5	29.43	747.5	65	18.3	89	SW	6	2.7	.....	.....	10s	.....	W	2.52	64.0	Cloudy	
Escanaba, Michigan	29.41	747.0	30.07	763.8	45	7.2	76	NW	5	2.2	.....	.....	10s	.....	NW	0	0	Cloudy	
Florence, Arizona	28.49	723.6	30.09	764.3	70	21.1	53	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.63	651.0	29.70	754.4	49	9.4	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Fort Davis, Texas	25.34	643.6	30.30	769.6	57	13.9	53	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.59	751.6	30.14	765.5	50	10.0	86	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.82	732.0	30.10	764.5	53	11.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Fort McKavett, Texas	27.90	708.6	29.80	756.9	60	15.6	60	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.87	733.3	29.99	761.7	51	10.6	86	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.41	721.6	29.97	761.2	58	14.4	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.13	765.3	30.17	766.3	65	18.3	54	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.32	744.7	29.96	761.0	54	12.2	74	N	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.17	740.9	29.93	760.2	55	12.8	81	NW	7	3.1	.....	0	1s	.....	Calm	0	0	Clear	
Indianola, Texas	30.17	766.3	30.20	767.1	67	19.4	64	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.97	735.8	30.09	764.3	58	14.4	58	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.92	760.0	29.94	760.5	73	22.8	76	W	5	2.2	.....	2c	0	W	.....	Inap.	Inap.	Clear	
Keokuk, Iowa	29.47	748.5	30.03	764.3	51	10.6	72	N	3	1.3	.....	2k	1s	N	N	0	0	Fair	
Key West, Florida	29.92	760.0	29.95	760.7	82	27.8	79	N	3	1.3	.....	0	5s	.....	S	0.04	1.0	Fair	
Kittyhawk, North Carolina	29.71	754.6	29.74	755.4	77	25.0	100	SW	21	9.4	.....	.....	10s	.....	SW	0.69	17.5	Cloudy.	
Knoxville, Tennessee	28.97	735.8	29.96	761.0	59	15.0	82	Calm	0	0	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy	
La Crosse, Wisconsin	29.39	746.5	30.14	765.5	41	5.0	100	W	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
La Mesilla, New Mexico	26.20	665.5	30.35	770.9	48	8.9	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.76	755.9	30.10	764.5	59	15.0	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.79	629.6	30.06	763.5	45	7.2	61	S	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear.	
Leavenworth, Kansas	29.27	743.4	30.14	765.5	42	5.6	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Los Angeles, California	29.55	750.6	29.88	758.9	64	17.8	25	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.40	746.7	29.93	761.0	55	12.8	74	NW	7	3.1	.....	0	Sm'e	.....	Calm	0	0	Clear	
Lynchburg, Virginia	28.97	735.8	29.61	752.1	70	21.1	75	W	4	1.8	.....	2cs	0	W	.....	1.65	41.9	Clear	
Marquette, Michigan	29.37	746.0	30.08	764.0	42	5.6	66	N	8	3.6	.....	.....	10ks	.....	NW	0	0	Cloudy	
Mason, Texas	28.49	723.6	30.25	768.3	51	10.6	93	NW	2	0.9	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.80	756.9	30.13	765.3	53	11.7	73	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.30	744.2	30.03	762.7	50	10.0	65	N	15	6.7	.....	7cs	0	Calm	.....	0.05	1.3	Fair	
Mobile, Alabama	30.05	763.3	30.00	762.0	59	15.0	65	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.80	756.9	30.03	762.7	60	15.6	70	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	28.63	727.2	29.63	752.6	61	16.1	94	SW	10	4.5	.....	.....	10n	.....	S	2.42	61.5	Light rain	
Mt. Washington, N. H.	23.95	608.3	30.31	769.9	56	13.3	100	SE	44	19.7	.....	.....	10n	.....	SE	0.78	19.8	Light rain	
Nashville, Tennessee	29.50	749.3	30.04	763.0	56	13.3	81	W	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.80	756.9	29.91	759.7	73	22.8	95	SE	12	5.4	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
New London, Connecticut	29.92	760.0	29.97	761.2	74	23.3	90	SE	15	6.7	.....	0	8s	.....	SE	0.16	4.1	Threatening	
New Orleans, Louisiana	30.04	763.0	30.10	764.5	66	18.9	50	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.94	760.5	29.98	761.5	72	22.2	95	SE	10	4.5	.....	5k	2ks	SE	SE	0.01	0.3	Cloudy	
New York, New York	29.66	753.4	29.83	757.7	75	23.9	95	SE	32	14.3	.....	.....	10ks	.....	SE	0.01	0.3	Cloudy	
Norfolk, Virginia	29.63	752.6	29.69	754.1	77	25.0	82	S	22	9.8	.....	10k	0	S	.....	0.09	2.3	Cloudy	
North Platte, Nebraska	27.05	687.1	29.61	752.1	46	7.8	80	SE	14	6.3	.....	0	Haze	.....	Calm	0	0	Clear	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	51	10.6	86	S	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.99	736.3	30.08	764.0	44	6.7	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.32	744.7	29.62	752.3	73	22.8	85	SE	20	8.9	.....	.....	10n	.....	SE	0.01	0.3	Light rain	
Pembina, Dakota	29.08	738.6	29.91	759.7	42	5.6	91	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.69	754.1	29.74	755.4	78	25.6	86	SE	30	13.4	.....	.....	10n	.....	S	0.01	0.3	Light rain...	
Phœnix, Arizona	28.81	731.8	.....	.....	68	20.0	42	NE	.....	.....	2	0	0	.....	.....	0	0	Clear.....	
Pike's Peak, Colorado	17.96	454.8	30.18	766.6	27	— 2.8	64	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear.....	
Pioche, Nevada	24.15	613.4	29.92	760.0	55	12.8	12	S	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	
Pittsburg, Pennsylvania	28.79	731.3	29.56	750.8	61	16.1	94	W	10	4.5	.....	.....	10n	.....	W	3.88	98 6	Light rain..	
Port Huron, Michigan	29.03	737.3	29.67	753.6	52	11.1	100	NW	32	14.3	.....	.....	10n	.....	Calm	1.60	40.6	Light rain...	
Portland, Maine	29.97	761.2	30.02	762.5	64	17.8	100	E	5	2.2	.....	.....	Fog	.....	.....	0.11	2.8	Dense fog....	
Portland, Oregon	30.01	762.2	30.11	764.8	55	12.8	87	SE	4	1.8	.....	.....	Sm'e	.....	Calm	0	0	Smoky.....	
Prescott, Arizona	24.90	632.4	30.26	768.6	47	8.3	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Pilot Point, Texas	29.35	745.5	30.18	766.6	57	13.9	69	SE	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Smoky.....	
Punta Rassa, Florida	29.96	761.0	29.97	761.2	82	27.8	79	Calm	0	0	.....	5ck	0	SW	.....	0	0	Fair.....	
Red Bluff, California	29.61	752.1	29.96	761.0	61	16.1	40	W	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear.....	
Rio Grande City, Texas	30.03	762.7	30.25	768.3	60	15.6	44	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Rochester, New York	28.93	734.8	29.50	749.3	73	22.8	85	SE	16	7.2	.....	.....	10n	.....	SE	0.29	7.4	Light rain...	
Roseburg, Oregon	29.55	750.6	30.12	765.0	49.5	9.7	90	Calm	0	0	.....	.....	10s;sm	.....	Calm	0	0	Cloudy.....	
Sacramento, California	29.88	758.9	29.97	761.2	58	14.4	64	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
St. Louis, Missouri	29.53	750.0	30.11	764.8	50	10.0	72	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
St. Marks, Florida	29.94	760.5	29.95	760.7	65	18.3	84	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul, Minnesota	29.24	742.7	30.08	764.0	40	4.4	73	SE	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy.....	
Salt Lake City, Utah	25.64	651.2	29.98	761.5	62.0	16.7	9	N	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.48	748.8	30.07	763.8	56	13.3	75	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
San Diego, California	29.83	757.7	29.90	759.4	71	21.7	22	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Sandusky, Ohio	29.08	738.6	29.73	755.1	57	13.9	94	N	40	17.9	.....	.....	10s	.....	N	1.95	49.5	Threatening	
Sandy Hook, New Jersey	29.80	756.9	29.84	757.9	75	23.9	90	SE	32	14.3	.....	.....	10s	.....	SE	0.01	0.3	Cloudy.....	
San Francisco, California	29.97	761.2	30.04	763.0	54	12.2	87	SW	5	2.2	.....	0	8s	.....	SW	0	0	Fair.....	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	44	6.7	45	NE	1	0.4	.....	1c	0	Calm	.....	0	0	Clear.....	
Savannah, Georgia	29.82	757.4	29.91	759.7	74	23.3	72	W	6	2.7	.....	0	0	.....	.....	0.09	2.3	Clear.....	
Shreveport, Louisiana	29.95	760.7	30.17	766.3	56	13.3	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Silver City, New Mexico	24.33	618.0	.....	.....	50	10.0	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Smithville, North Carolina	29.78	756.4	29.81	757.2	74	23.3	76	SW	20	8.9	.....	1c	5ks	W	SW	0.48	12.2	Fair.....	
Springfield, Massachusetts	29.80	756.9	29.93	760.2	76	24.4	86	SE	8	3.6	.....	.....	10ks	.....	S	0.15	3.8	Cloudy.....	
Stockton, Texas	27.07	687.6	30.07	763.8	52	11.1	53	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	29.97	761.2	30.02	762.5	66	18.9	100	S	8	3.6	.....	.....	Fog	.....	.....	0.12	3.0	Foggy.....	
Toledo, Ohio	29.10	739.1	29.76	755.9	53	11.7	93	W	11	4.9	.....	.....	10s	.....	W	0.54	13.7	Cloudy.....	
Tucson, Arizona	27.26	692.4	29.79	756.7	76	24.4	76	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Tybee Island, Georgia	29.88	758.9	29.91	759.7	69	20.6	80	W	10	4.5	.....	0	0	.....	.....	0.08	2.0	Clear.....	
Umatilla, Oregon	29.58	751.3	.....	.....	60	15.6	55	W	12	5.4	.....	.....	Sm'e	.....	W	0	0	Smoky.....	
Unalashka, Aleutian Islands	.....	.....	.....	.....	52	11.1	86	S	.....	.....	2	.....	10s	.....	S	0	0	Cloudy.....	
Uvalde, Texas	29.28	743.7	30.10	764.5	57	13.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.22	615.2	29.70	754.4	50	10.0	52	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Visalia, California	29.62	752.3	29.98	761.5	61	16.1	66	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	29.46	748.3	29.56	750.8	76	24.4	97	S	22	9.8	.....	.....	10n	.....	S	0.51	13.0	Light rain...	
Wickenburg, Arizona	.....	.....	.....	.....	54	12.2	67	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	29.72	754.9	29.79	756.7	72	22.2	80	SW	14	6.3	.....	2c	0	W	.....	2.99	75.9	Fair.....	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	52	11.1	35	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Wood's Holl, Mass	29.95	760.7	30.00	762.0	74	23.3	95	S	10	4.5	.....	Haze	0	Calm	.....	0.20	5.1	Hazy.....	
Yankton, Dakota	28.77	730.7	30.07	763.8	46	7.8	80	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Yuma, Arizona	29.74	755.4	29.90	759.4	72	22.2	45	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.12	765.0	30.18	766.6	33.0	0.6	95	NW	10	4.5	.....	2c	0	NW	.....	0	0	Fair.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.94	760.5	29.96	761.0	82	27.8	83	SE	1.2	0.5	.....	8c	0	Calm	.....	0.71	18.0	Fair.....	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.94	760.5	29.96	761.0	80	26.7	87	Calm	0	0	.....	8c	4s	.....	NE	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	83	NE	5	2.2	.....	5c	5ks	E	.....	0.37	9.4	Clear.....	G. O. Gellich.
Kingston, Jamaica, W. I	30.10	764.5	30.11	764.8	79	26.1	95	Calm	0	0	.....	8c	5n	Calm	.....	0.17	4.3	.....	James Gall.
Navassa, W. I	29.87	758.7	29.95	760.7	82.5	28.1	.....	NE	6.7	3.0	.....	.....	.....	.....	.....	0.08	2.0	Fair.....	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	82	27.8	79	SE	.....	.....	2	0	5k	.....	.....	0	0	Clear.....	C. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	68.5	20.3	80	Calm	0	0	.....	4cs;k	2ks	.....	.....	0.44	11.2	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33in.; Santa Fé, 6.54 in.; Stockton, 3.00 in., Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.10	764.5	64	17.8	64	17.8	68	NW	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Navy Yard, Portsmouth, N.H	29.97‡	761.2‡	.....	.....	61	16.1	100	SE	1	0.4	.....	.....	10	.....	.....	0.1	3.	.....	.....	Foggy	
Naval Hospital, Yokohama, Japan	30.04*	763.0*	76	24.4	74.5	23.6	90	Calm	.....	.....	0	.....	9k;ck	.....	SW	0	0	.....	.....	Cloudy.....	
Adams, S. 42° 40′, W. 163° 20′	30.56	776.2	59	15.0	51	10.6	86	NNW	.....	.....	1–2	.....	10	.....	NNW	0	0	Mod'ate	NE	Cloudy.....	
Alliance, Villafranca, France	29.92‡	760.0‡	.....	.....	79	26.1	66	E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Ashuelot, Yokohama, Japan	30.13	765.3	78	25.6	75	23.9	90	NW	.....	.....	1	.....	8	.....	NW	.....	.....	Smooth	.....	Hazy.....	
Alaska, S. 45° 51′, W. 77° 29′	30.17	766.3	57	13.9	49	9.4	78	W	.....	.....	4	.....	5	.....	SE	0.05	1.3	Long	NW	D. clouds.....	
Canonicus, New Orleans, La	30.06	763.5	49	9.4	66	18.9	94	NW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.	29.84‡	757.9‡	.....	.....	76	24.4	91	SE	25	11.2	.....	.....	10	.....	SSE	0	0	.....	.....	Hazy.....	
Constitution, Havre, France	30.10‡	764.5‡	.....	.....	60	15.6	82	N	.....	.....	5	.....	5	.....	S	.....	.....	.....	.....	Pleasant.....	
Despatch, Volo, Turkey	30.03‡	762.7‡	.....	.....	81	27.2	52	SSE	.....	.....	2	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	29.79	756.7	78	25.6	76	24.4	86	S	27.6	12.3	.....	.....	8	.....	SW	0.014	0.36	.....	.....	Cloudy.....	
Gettysburg Villafranca, France	29.87‡	758.7‡	.....	.....	81	27.2	??	ESE	.....	.....	1	.....	5	.....	Calm	0	0	.....	.....	Fair	
Guard, Bahia, Brazil	30.17	766.3	79	26.1	78	25.6	73	E	.....	.....	2	.....	2	.....	E	.....	.....	.....	.....	Clear.....	
Hartford, Rio de Janeiro, Brazil	29.95	760.7	.....	.....	75	23.9	76	N	8.4	3.8	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.....	
Marion, Naples, Italy	29.95	760.7	74	23.3	76	24.4	77	S	.....	.....	1	.....	10	.....	Calm	Light	Light	.....	.....	Sprinkling..	
Michigan, Erie, Pa	29.69†	754.1†	.....	.....	64	17.8	100	S	.....	.....	2	.....	10	.....	S	.....	.....	.....	.....	Light rain ..	
Monocacy, Ura-no-go-ura, Japan	30.02‡	762.5‡	.....	.....	77	25.0	91	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.	30.04†	763.0†	.....	.....	69	20.6	75	W	16	7.2	.....	.....	2	.....	W	0.54	13.7	.....	.....	Clear.....	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	64	17.8	89	SSE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.	29.78	756.4	79	26.1	77	25.0	100	SE	.....	.....	6	.....	10	.....	NW	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China	30.12	765.0	68	20.0	66	18.9	54	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, New York, N. Y.	29.98	761.0	77	25.0	77	25.0	69	NE	.....	.....	4–5	.....	8	.....	SE	.....	.....	.....	.....	Squally.....	
Ranger, Hong-Kong, China	29.92	760.0	80	26.7	78	25.6	95	E	.....	.....	3–4	.....	10	.....	W	.....	.....	.....	.....	Rainy	
Rio Bravo, Brownsville, Texas	30.09	764.3	64	17.8	64	17.8	83	NW	.....	.....	3	.....	1	....	W	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md.	29.59‡	751.6‡	.....	.....	77	25.0	91	SE	.....	.....	7	.....	10	.....	S	0.60	15.2	.....	.....	Cloudy.....	
Saratoga, Delaware River	30.08*	764.0*	.....	.....	78	25 6	91	SSE	.....	.....	5	.....	8	.....	E	Light	Light	.....	.....	Fair	
St. Louis, League Island, Pa	29.73	755.1	77	25.0	78	25.6	86	SE	31	13.9	.....	.....	10	.....	SSE	0.13	3.3	.....	.....	Raining.....	
Supply, Havre, France	30.17	766.3	62	16.7	62	16.7	61	N	.....	.....	3	.....	2	.....	N	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.	30.00‡	762.0‡	.....	.....	71	21.7	90	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Foggy	
Trenton, Southampton, England	30.11‡	764.8‡	.....	.....	76	24.4	40	NNW	.....	.....	2	.....	8	.....	N; W	1.6	41.	.....	.....	Cloudy.....	
Tuscarora, La Paz, Mexico	29.71	754.6	78	25.6	79	26.1	86	S	.....	.....	0-1	.....	0	....	.....	0.2	5.	.....	.....	Clear.....	
Vandalia, Villafranca, France	29.92‡	760.0‡	.....	.....	80	26.7	66	SE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.01‡	762.2‡	.....	.....	70	21.1	95	SE	1	0.4	.....	.....	10	.....	Calm	0.27	6.9	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, N. 38° 40′, W. 124° 00′		30.14*	765.5*				N			2		Fog				Smooth		Fair	Capt. Seabury.
S. S. City of Peking, N. 36° 04′, E. 158° 03′		30.21†	767.3†	70	21.1	100	NNE	10	4.5			8		NNE		Small	NNE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 36° 59′ W. 122° 25′		30.03†	762.7†	59	15.0	88	NW			6		6		NW	0	Mod'ate	NW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 48° 24′, W. 124° 52′		30.01†	762.2†	63	11.7	93	NNE					0			0	Mod'ate	W	Dense haze.	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 26° 18′, E. 123° 10′		29.76*	755.9*	76	24.4	86	N			5		k		NNE		Rough	NNE	D. clouds	Capt. L. Myer.
S. S. Gaelic, N. 27° 40′, E. 124° 51′		29.77†	756.1†	83	28.3	100	NE			5		k		NE		Swell	NE	Drizzling	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 46° 50′, W. 39° 11′		30.16	766.1	72.5	22.5	78	NE			4		8		NE	2 hours	4	NE	Overcast	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana. N. 39° 1′, W. 71° 35′		29.60*	751.8*	80	26.7	91	S			4		3		S	Slight	Mod'ate	S	Hazy	Captain Sargent.
S. S. Ohio. N. 51° 39′, W. 15° 15′		30.12	765.0	62	16.7	94	SW			3		10		SW	Small	Small	SW	Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 28′, W. 68° 30′		30.06	763.5	82	27.8	83	SSE	9	4.0			10ks		SW	0.27 in or 6.9 mm.	Heavy	SW	Squally	Capt. James Jorgensen.
Schooner Florence, Near Cape Enderby, N. 63° 45′, W. 65° 30′		30.10*	764.5*	31.8	—0.1		NW			3.0	1c	4ks	W		0			Fair	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 14, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.03	762.8	70.9	21.6	86	SW			1		3			0	0	Pretty fair	Dr. Ollive.
Nemours			29.99	761.7	70.9	21.6	89	WNW			1		0			0	0	Clear	Kesxuche.
Algiers			29.94	760.4	70.9	21.6	78	NNE			1		0			0	0	Clear	Touriliere.
La Calle			29.98	761.6	83.5	28.6	66	NNW			3		3			0	0	Pretty fair	Foufrede.
Tunis			29.98	761.5	79.0	26.1	76	NW			4		0			0	0	Clear	Jacques.
Sfax			30.05	763.2	80.6	27.0	.....	N			5		3			0	0	Pretty fair	Gau.
Saida			30.00	762.0	80.2	26.8	24	N			1		2			0	0	Fair	Herbin.
Tebessa			29.99	761.7	76.3	24.6	44	W			2		1			0	0	Very fair	Watrin.
Geriville			30.00	762.1	79.5	26.4	60	N			3		1			0	0	Very fair	Brugnlaux.
Laghouat			30.04	763.0	81.7	27.6	44	NE			3		2			0	0	Fair	Bertrand.
Biskra			30.02	762.6	91.8	33.2	31	Calm			0		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.30	744.2	29.83	757.7	68.7	20.4	83	SW			4		8			0.421	10.7	Raining	Prof. Ivan Stoxir.
Cracow, I. R. Observatory	29.16	741.2	29.91	759.8	77.0	25.0	61	ESE			1		3			0	0		Dr. Wierzbiski
Eperies	29.06	738.1	29.89	759.3	76.6	24.8	54	S			1		4c;s			0	0		Julius Mikoltk.
Gratz	28.99	728.6	29.89	759.3	69.6	20.9	78	SSE			3		10			0.010	0.25		Andreas Rospini.
Hermannstadt	28.61	724.2	29.93	760.3	75.9	24.4	50	ESE			4		1			0	0		Prof. A. Gottschling.
Kremsmünster	28.58	725.8	29.88	758.9	64.0	17.8	85	W			1		10			0.173	4.4		Prof. C. Wagner
Lemberg	29.02	737.2	29.99	761.7	64.4	18.0	64	SE			1		2			0	0		Dr. T. Stanecki.
Pola	29.71	754.5	29.82	757.3	74.7	23.7	70	ESE			2		4ck			0	0		I.R.Hydrographic Office
Szathmar	29.50	749.3	29.94	760.5	77.7	25.4	51	E			1		1			0	0		Julius Csics, S. J.
Szegedin	29.58	751.2	29.84	757.9	78.8	26.0	60	E			1		0			0	0		Karl Stancel.
Trieste	29.75	755.7	29.85	758.3	75.2	24.0	79	Calm			0		10			0.709	18.0	Raining	P. Busin.
Vienna	29.20	741.6	29.89	759.1	71.2	21.8	75	Calm			0		6			0.083	2.1		I.R. Central Met. Ob's'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or, 1,126.9 feet, Hermannstadt, 407.6 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels																			Royal Observatory
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.73	755.1	29.83	757.7	61.9	16.6	.....	W	6	2.7	.....	.....	3	.....	.....	0.010	0.25	Blue sky.....	W. Boswell.
Ardrossan	29.80	758.2	29.86	758.4	62	16.7	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	29.93	760.2	62.7	17.1	.....	SSW	6	2.7	.....	.....	7	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.96	761.0	62.0	16.7	.....	W	14	6.3	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.56	750.8	29.96	761.0	58.8	14.9	.....	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.85	758 2	29.88	758.9	86	30.0	.....	SW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.98	761.5	71.0	21.7	.....	S	.....	.....	1	.....	1ck	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	30.00	762.0	69.0	20.6	.....	W	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.89	759.2	30.02	762.5	67.2	19.6	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.40	721.3	29.84	757.9	58.0	14.4	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	29.85	758.2	29.88	758.9	65	18.3	.....	W	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	J. Mac Gowan.
Dover	29.99	761.7	30.02	762.5	65	18.3	.....	WSW	.....	.....	3	.....	2	.....	.....	.....	.....	¼ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.94	760.5	60.3	15.7	.....	S	.....	.....	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.86	758.4	30.09	764.3	66.7	19.3	.....	WSW	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.94	709.7	30.25	768.3	62.2	16.8	.....	E	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	85	29.4	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	29.88	758.9	60	15.6	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.95	760.7	.....	.....	.....	E	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds..	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.65	753.1	29.86	758.4	62.9	17.2	.....	WNW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	D. G. Maclean.
Great Yarmouth	29.98	761.5	29.98	761.5	65	18.3	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.85	758.2	30.02	762.5	68.2	20.1	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D clouds.....	The Staff, for G. B. Airy.
Guernsey	29.88	758.9	30.10	764.5	62.5	16.9	.....	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.15	765.8	67	19.4	.....	S	.....	.....	2	.....	2c	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	29.92	760.0	29.97	761.2	62	16.7	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	29.85	758.2	30.14	765.5	64.8	18.2	.....	WNW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	J. Fisher.
Kew, Observatory	29.98	761.5	30.01	762.2	64.3	17.9	.....	WSW	7	3.1	.....	.....	5	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	29.93	760.2	29.96	761.0	63	17.2	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	29.97	761.2	63.9	17.7	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.94	760.5	30.01	762.2	79.4	26.3	.....	N	.....	.....	1	.....	4ck	.....	.....	.....	.....	D. clouds....	Sergt. Beckett.
Nairn	29.72	754.9	29.79	756.7	63	17.2	.....	S	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.98	761.5	88.4	31.2	.....	SE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.79	756.7	29.97	761.2	72.1	22.3	.....	W	.....	.....	3	.....	6c;ck;k	.....	W	0.010	0.25	D. clouds.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.47	748.5	29.98	761.5	64.0	17.8	.....	WSW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.02	762.5	61	16.1	.....	W	.....	.....	1	.....	7	.....	.....	.....	.....	D clouds.....	H.E. Bellamy.
Plymouth	30.00	762.0	30.08	764.0	62.6	17.0	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.93	760.2	29.98	761.5	65	18.3	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Cloudy.....	W. Kennedy.
Saint Ann's Head	29.87	758.7	30.03	762.7	64	17.8	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	John C. Walker.
Sandwick Manse, (Orkneys, Scutari, Cemetery, (Turkey	.....	.....	29.71	754.6	55	12.8	.....	W	26	11.6	.....	.....	5	.....	.....	.....	.....	D. clouds.....	Rev.C. Clouston, LL. D.
Sheffield	29.76	754.4	29.87	758.7	80.6	26.7	.....	NE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Silloth Rectory	29.88	758.9	29.98	761.5	67.5	19.7	.....	SW	.....	.....	1	.....	8	.....	.....	Inap.	Inap.	Overcast.....	W. F. Cooper.
Stonyhurst, Observatory	29.91	759.7	29.91	759.7	69.5	20.8	69	SW	.....	.....	3	.....	4	.....	.....	0.090	2.29	D. clouds.....	C. Edith Redford.
Stornoway, Lews C., (Hebr.)	29.56	750.8	29.96	761.0	58.1	14.5	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Drizzling.....	Rev. S. J. Perry.
Strathfield Turgiss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Thurso	29.82	757.4	30.03	762.7	68.0	20.0	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	Rev.C.H.Griffith, F.M.S
Truro, Royal Institution	.....	.....	29.75	755.6	58	14.4	.....	W	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds ...	John Trotter.
Valencia, Observatory	.....	.....	30.11	764.8	68	20.0	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Sub-Series.	.....	.....	29.96	761.0	63.5	17.5	.....	SW	20	8.9	.....	.....	9	.....	.....	.....	.....	D. clouds.....	The Staff.
Hobart Town, (Tasmania)	.....	.....	29.34	745.2	51.0	10.6	88	NW	.....	.....	1	.....	7k	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mauritius, Observatory	29.92	760.0	30.11	764.8	74.2	23.4	69	ENE	14.0	6.3	.....	0	8	.....	ENE	0.24	6.1	Fine; cloudy	Andrew Gibb.
Melbourne, Observatory	29.56	750.8	29.65	753.1	51.0	10.6	69	NNW	16	7.2	.....	.....	4	.....	.....	0.01	0.3	Squally.....	C. Meldrum.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. J. Ellery.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
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Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—																	
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 23° 50', W. 25° 20'	.....	.....	30.06	763.5	83	28.3	.....	Calm	.....	.....	0	.....	5	SSW	.....	0	.....	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 40° 45', W 64° 35'	.....	.....	30.06	763.5	79	26.1	.....	SSW	.....	.....	6	.....	5	.....	.....	5	SSE	D. clouds.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.
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Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Date, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 280 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.23	666.2	.....	.....	67.6	19.8	91	E	.....	.....	1	7cs	.....	.....	.....	0.70	17.8	.....	Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.82	757.5	29.87	758.7	67.3	19.6	46	WNW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	
Fanöe	29.84	757.9	29.86	758.4	63.9	17.7	75	WSW	.....	.....	4	.....	9	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.49	749.0	29.52	749.9	47.7	8.7	67	W	.....	.....	5	.....	5	.....	.....	.....	.....	.....	
Vestervig	29.64	752.9	29.81	757.2	59.7	15.4	83	SSW	.....	.....	7	.....	5	.....	.....	.....	.....	.....	
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.58	751.4	30.13	765.4	65.1	18.4	69	NE	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.84	757.8	29.91	759.8	73.0	22.8	37	NNW	.....	.....	4	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.59	749.3	30.05	763.2	62.1	16.7	63	NE	.....	.....	2	.....	8kn	.....	NE	0.276	7.0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.80	756.9	30.08	764.0	66.4	19.1	52	NNW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.17	741.6	30.07	763.8	57.0	14.4	82	SSW	.....	.....	2	.....	8	.....	SW	0.24	6.	Very cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.54	750.2	30.08	763.9	64.4	18	67	N	.....	.....	2	.....	2k	.....	N	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.82	757.5	30.07	763.7	74.1	23.4	68	S	.....	.....	1	.....	4	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.56	750.7	29.95	760.8	75.2	24	32	NE	.....	.....	6	.....	2	NE	NE	0	0	Slightly cl'dy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.47	748.6	30.01	762.3	78.8	26	65	NW	.....	.....	4	.....	8	SE	SE	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.73	755.1	30.04	763.0	63.7	17.6	61	NE	.....	.....	1	.....	2	NE	NE	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.72	729.5	30.05	763.3	64.4	18.0	60	NE	.....	.....	1	.....	10	.....	NE	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.20	741.6	30.07	763.6	60.1	15.6	75	W	.....	.....	1	.....	5ckn	.....	W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.76	730.6	29.91	759.6	70.5	21.4	33	NW	.....	.....	6	.....	0	.....	.....	0	0	Clear	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.90	759.4	30.11	764.8	65.5	18.6	69	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.82	757.3	30.12	765.1	62.2	16.8	52	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	740.0	30.04	763.1	59.4	15.2	87	S	.....	.....	1	.....	5	.....	SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.06	763.5	30.09	764.3	60.8	16	81	NW	.....	.....	3	.....	10	.....	.....	0	0	Covered	M. Galzin, Director.
Mirecourt, Normal School	29.01	736.8	30.04	763.1	60.4	15.8	62	S	.....	.....	1	.....	8kn	.....	S	0.04	1.	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.74	755.5	29.96	760.9	79.2	26.2	57	N	.....	.....	4	2c	.....	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.93	734.8	29.96	760.9	73.4	23	52	N	.....	.....	1	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.21	640.2	.....	.....	42.1	5.6	100	E	.....	.....	3	.....	.....	.....	.....	0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.08	763.9	30.11	764.7	70.7	21.5	57	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.00	761.9	30.08	764.0	68.7	20.4	47	WNW	.....	.....	1	.....	2	.....	W	0	0	Slightlycl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.12	765.1	62.2	16.8	60	N	.....	.....	1	.....	1	.....	SSW	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.09	738.9	30.16	766.0	64.4	18	80	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.73	755.1	29.76	755.8	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.13	54.	.....	L'Abbé Marchés.
Lyons	.....	.....	30.04	762.9	62.8	17.1	53	.....	.....	.....	.....	.....	8	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.85	758.2	72.9	22.7	34	WNW	.....	.....	6	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.93	633.2	30.24	768.2	68.7	20.4	52	SSE	.....	.....	3	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.79	756.6	75.4	24.1	76	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.79	756.6	30.07	763.6	66.0	18.9	45	NNW	.....	.....	3	.....	2	.....	NNW	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	29.96	761.0	78.8	26.0	37	N	18.6	8.33	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.62	574.6	.....	.....	55.4	13.0	.....	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty
Saint Maur, (near Paris)	29.91	759.6	30.07	763.8	67.8	19.9	51	NW	.....	.....	2	.....	2	.....	NNW	0	0	Slightly cl'dy	E. Renou.
Toulouse, Observatory	29.36	745.7	30.08	764.1	69.4	20.8	29	NW	.....	.....	3	.....	0	.....	.....	0	0	.....	The Staff.
Tours	29.89	759.3	30.09	764.3	68.4	19.1	37	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	C. Marquet.
Versailles	.....	.....	30.09	764.3	65.5	18.6	41	N	.....	.....	2	.....	7	.....	.....	0	0	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.98	761.4	30.00	762.0	68.0	20.0	88	NNE	2.5	1.1	.....	.....	2k	.....	.....	0	0	Almost clear	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.96	760.9	63.1	17.3	77	W	.....	.....	3	.....	9	.....	.....	0.051	1.3	.....	Prof. Dr. Hoh.
Berlin	29.76	756.0	29.93	760.2	73.0	22.8	60	SE	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.41	747.1	29.94	760.5	79.3	26.3	40	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.60	751.8	30.02	762.5	62.2	16.8	88	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Albert Senz.
Cassel	29.35	745.6	29.96	761.0	66.7	19.3	63	NNE	.....	.....	2	.....	5	NE	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.84	758.0	30.00	762.1	63.7	17.6	56	W	.....	.....	1	.....	3s	.....	.....	0	0	.....	Director Lose.
Emden	29.95	760.6	29.98	761.5	67.3	19.6	62	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.63	752.6	29.98	761.6	68.4	20.2	.....	WSW	.....	.....	2	.....	3	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.61	726.6	30.03	762.8	56.8	13.8	87	S	.....	.....	4	.....	10	WSW	.....	0.161	4.1	.....	M. Wilhelm.
Hamburg	29.89	759.1	29.95	760.8	67.6	19.8	61	W	.....	.....	1	.....	0	.....	.....	0	0	Very fine	Captain F. Hegemann.
Kiel	29.91	759.7	29.93	760.1	67.8	19.9	67	W	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.87	758.8	29.96	760.9	64.9	18.3	69	W	.....	.....	4	.....	2	.....	.....	0.004	0.1	.....	Prof. E. Luther.
Köslin	.....	.....	29.93	760.1	67.6	19.8	.....	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.55	750.5	29.96	760.9	65.8	18.8	79	NW	.....	.....	2	.....	8	SE;NW	.....	0.035	0.9	Dust-haze	Prof. Bruhns.
Memel, Naval School	29.89	759.3	29.94	760.5	66.0	18.9	61	W	.....	.....	3	.....	4s	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.94	760.4	29.96	760.9	65.3	18.5	68	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	A. Lothes.
Posen	29.70	754.4	29.98	761.4	75.0	23.9	38	E	.....	.....	5	.....	0	.....	.....	0	0	Light fog	Dr. Magener.
Strassburg (in Alsace)	29.51	749.5	30.05	763.3	63.1	17.3	70	NE	.....	.....	2	.....	10	.....	.....	0.256	6.49	.....	Astronomical Observatory.
Stuttgart	29.07	738.4	30.00	762.0	59.9	15.5	77	N	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.46	748.3	29.98	761.5	67.6	19.8	50	NW	.....	.....	4	.....	4	.....	.....	0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.50	723.8	29.96	761.0	58.6	14.8	82	NNW	2.7	1.2	.....	.....	10	.....	NW	1.071	27.2	.....	Dr. Von Bebber.
Wustrow, Naval School	29.95	760.8	29.99	761.8	65.1	18.4	76	WSW	.....	.....	1	.....	8	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.57	751.0	29.95	760.6	79.5	26.4	.....	SW	.....	.....	3.5	.....	.....	.....	.....	.....	.....	⅛ clear	Dr. J. F. J. Schmidt.
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the Coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.61	752.2	29.66	753.4	88.0	31.1	63	WSW	12?	5.4?	.....	.....	0	.....	.....	0	0	Blue sky	.....
Deesa	29.21	741.9	29.68	753.8	87.4	30.8	73	Calm	.....	.....	.....	.....	0	.....	.....	0	0	Misty	.....
Bombay	29.65	753.1	29.69	754.1	83.3	28.5	79	WNW	11	4.9	.....	.....	5	N	.....	1.11	28.2	D. clouds	.....
Poona	27.69	703.2	29.68	753.8	78.9	26.1	76	W	.....	.....	.....	.....	4	.....	W	0	0	D. clouds	.....
Lahore	28.93	734.8	29.65	753.2	90.1	32.3	55	Calm	4.3	1.9	.....	.....	0	.....	.....	0	0	Blue sky	.....
Belgaum	27.21	691.1	29.76	755.8	72.0	22.2	91	W	11	4.9	.....	.....	10	.....	W	0.68	17.3	Showery	.....
Roorkee	28.74	730.0	29.63	752.6	82.4	28.0	79	SE	4	1.8	.....	.....	2	.....	.....	0	0	.....	.....
Agra	29.07	738.4	29.63	752.6	83.7	28.7	81	NE	.....	.....	.....	.....	6	.....	NE	0	0	.....	.....
Nagpur	28.57	725.6	29.61	752.1	76.6	24.8	93	SW	3	1.3	.....	.....	10	.....	NNE	0	0	Drizzling	.....
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allahabad	29.26	743.9	29.59	751.7	83.6	28.3	94	ENE	3.1	1.4	.....	.....	9	.....	.....	0.05	1.3	D. clouds	.....
Patna	29.46	748.2	29.64	752.8	84.0	28.9	81	E	2.1	0.9	.....	.....	6	E	NE	0	0	D. clouds	.....
Hazaribagh	27.63	701.7	29.64	752.7	75.8	24.3	90	ENE	10.6	4.7	.....	.....	10	.....	NE	0.23	5.8	Showery	.....
Cuttack	29.44	747.8	29.52	749.9	82.3	27.9	79	NNE	3.5	1.6	.....	.....	9	.....	.....	0.36	9.1	D. clouds	.....
Calcutta (Alipore)	29.68	751.3	29.60	751.9	79.7	26.5	91	E	7.0	3.1	.....	.....	10	.....	E	0	0	Overcast	.....
Goalpara	29.30	744.2	29.69	754.0	79.9	26.6	81	ENE	20.0	8.9	.....	.....	1	W	.....	0	0	D. clouds	.....
Chittagong	29.58	751.4	29.68	753.8	79.9	26.6	91	NNE	2.2	1.0	.....	.....	10	.....	.....	0.70	17.8	Thunder-storm	.....
Sibsagar	29.38	746.3	29.72	754.8	82.9	27.8	81	ENE	5.2	2.3	.....	.....	10	.....	.....	0	0	D. clouds	.....
Jubbulpore	28.25	717.5	29.59	751.6	85.3	29.6	72	NE	3.4	1.5	.....	.....	8	.....	.....	0.38	9.6	Overcast	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upp'r. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.48	748.7	29.87	758.8	70.0	21.1	73	E	2.5	1.1	.....	.....	9	.....	.....	0.350	8.9	.....	Prof. Giovanni Clodig.
Padua	29.72	755.0	29.83	757.7	72.7	22.6	73	SE	4.3	1.9	.....	.....	10	SE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.64	752.9	29.83	757.6	71.4	21.9	77	S	5.6	2.5	.....	.....	8	S	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.56	725.3	29.84	757.8	64 0	17.8	81	NW	.....	.....	4	.....	10	.....	.....	1.756	44.6	.....	Prof. Trionfini Carlo.
Milan	29.28	743.8	29.78	756.5	69 3	20.7	77	E	.....	.....	4	.....	10	NE	.....	0.776	19.7	.....	Prof. Schiaparelli.
Moncalieri	28.96	734.0	29.78	756.3	74.5	23.6	55	ESE	2.5	1.1	.....	.....	3	NE	.....	0.016	0.4	.....	Prof. P. F. Denza.
Mondovi	27.89	708.4	29.74	755.5	71.6	22.0	61	NE	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.57	751.0	29.78	756.5	76.1	24.5	62	SSW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.63	752.7	29.80	756.8	75.7	24.3	72	SE	.....	.....	4	.....	10	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.46	748.3	29.76	756.0	80.4	26.9	44	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.57	751.1	29.82	757.4	82.4	28.0	60	SW	.....	.....	2	.....	7	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.76	756.0	29.85	758.1	76.1	24.5	75	ESE	4.9	2.2	.....	.....	2	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.78	756 3	29.82	757.5	73.8	23.2	75	SE	.....	.....	.....	.....	4	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.32	719.4	29.83	757.7	69.1	20.6	71	E	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.68	753.8	29.85	758.1	79.3	26.3	58	W	3.8	1.7	.....	.....	2	.....	.....	0.047	1.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.69	754.2	29.89	759.2	77.0	25.0	65	SSW	.....	.....	4	.....	6	NW	.....	0.020	0.5	.....	Prof. L. Palmieri.
Lecce	29.60	751.8	29.85	758.1	73.8	23.2	79	ENE	6.3	2.8	.....	.....	8	.....	.....	2.039	51.8	.....	Prof. C. De Giorgi
Cagliari	28.72	754 9	29.91	759.6	81.7	27.6	44	W	.....	.....	4	.....	2	W	.....	0.118	3.0	.....	Prof. A. Pacinotti.
Cosenza	29.62	737.2	29.88	759.0	75.2	24.0	72	SW	1.3	0.6	.....	.....	8	.....	.....	0.228	5.8	.....	Prof. F. D. Conti.
Palermo	29.67	753.6	29.92	759.9	79.7	26.5	55	W	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.83	757.7	29.90	759.5	79.9	26.6	62	E	3.8	1.7	.....	.....	4	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.34	745.2	29.89	759.3	73.8	23.2	74	SW	6.3	2.8	.....	.....	9	S	.....	0.028	0.7	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.66	753.3	29.86	758.4	75.1	23.9	84	NNE	6.0	2.7	.....	.....	0	.....	.....	0	0	Fair	
Tokei (Yeddo) Observatory	29.92	759.9	29.99	761.7	77.9	25.6	93	ESE	4.4	2.0	.....	4cs;cs	6s	SE	.....	1.255	31.88	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	29.88	758.9	29.98	761.4	76.6	24.8	98	Calm	0	0	.....	4cs	3s	.....	S	0	0	Fair	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 6:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.6	18.2	76	N	.....	.....	2	10c	0	E	.....	0	0	Cloudy	P. Ceballos.
Guadalajara	25.11	637.8	30.11	764.7	62.7	11.5	64	SE	.....	.....	1	1cs	0	SE	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	23.46	621.4	30.04	762 9	57.2	14.0	76	SW	.....	.....	2	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.14	587.7	30.17	766.4	51.8	11.0	79	Calm	0	0	.....	2c	1s	E	.....	0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	53.4	11.9	81	W	.....	.....	1	1cs	0	.....	.....	0	0	Clear	M. V. de Leon, M. E
Puebla	23.38	593.7	30.06	763.6	49.5	9.7	72	E	2.7	1.2	.....	2c	3cks	.....	.....	Inap	Inap.	⅛ cloudy	Prof. B. Gonzalez.
Tlacotalpam	30.06	763.4	30.07	763.7	72.5	22.5	80	NW	.....	.....	2	0	10n	.....	.....	.....	.....	Raining	M, M. Cházaro.
San Luis Potosi	24.24	615 1	30.23	767.8	48.0	8.9	71	E	3.1	0.4	.....	3	4	.....	W	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	30.07	763.8	30.10	764.5	75.2	24.0	67	NW	1.8	0.8	.....	.....	9ks	.....	.....	0	0	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	52.7	11.5	81	NE	.....	.....	2	0	4	.....	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.6	30.04	763.1	48.2	9.0	79	ENE	1.8	0.8	.....	2	2	Calm	Calm	0	0	Clouds	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.30	720 2	29.98	761 4	78.8	26.0	86	SE	0.8	0.4	.....	4	4	E	E	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.04	763.1	30.04	763.1	67.6	19.8	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.039	1.0	.....	
Groningen	29.93	760.1	29.98	761.6	65.3	18.5	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.97	761.3	29.97	761 3	64.4	18 0	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.99	761.7	29.99	761.7	68.5	20.3	69	WSW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.98	761.6	30.03	762.8	66.9	19.4	68	WSW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.55	750.6	29.61	752.0	57.9	14.4	59	SW	19.7	8.8	.....	.....	3	.....	.....	0.217	5.5	Light rain...	
Brönö	29.21	742.0	29.25	743.0	46.4	8.0	78	SW	27	12	.....	.....	10	.....	.....	0.484	12.3	Light rain...	
Christiania	29.34	745.1	29.48	748.7	66.4	19.1	68	SSW	25	11	.....	.....	10	.....	.....	0	0	.....	
Tromsö	28.99	736.4	29.04	737.5	48.6	9.2	66	WSW	9	4	.....	.....	10	.....	.....	0.161	4.1	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.83	757.7	30.02	762.5	70.2	21.2	80	ESE	3.1	1.4	.....	.....	5	.....	.....	0.157	4.0	.....	Dr. J. A. Sampaio.
Campo Major	28.99	736.4	29.95	760.7	91.8	33.2	26	WNW	4.9	2.2	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.3	30.06	763.5	77.0	25.0	64	SW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.3	30.00	762.1	77.0	25.0	56	S	4.9	2.2	.....	.....	3	NW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.98	761.5	30.05	763.2	77.0	25.0	76	ESE	0.7	0.3	.....	.....	4	.....	.....	0.102	2.6	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell: Height scale 0–9	Sea or swell: Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 40° 37′, W. 19° 02′	.....	.....	30.11	764.9	71.6	22	.....	S	.....	.....	1	.....	7	.....	NW	2	.....	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	29.94	760.5	75.2	24.0	.....	WSW	.....	.....	3	.....	3	.....	WSW	2	wsw	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.92	760.0	85.3	29.6	.....	NE	.....	.....	6	.....	7	.....	NE	2	S	D. clouds..	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.91	759.7	77.7	25.4	.....	WSW	.....	.....	2	.....	1	.....	.....	1	.....	Blue sky	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.76	755.8	81.0	27.2	.....	NW	.....	.....	3	.....	3	.....	NW	1	.....	D. clouds.....	M. T. Guimaraes, Com'd't.

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.54	760.3	29.95	760.6	71.8	22.1	51	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.53	750.1	29.94	760.4	67.5	19.7	64	WSW	2	1	.....	.....	2	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.59	751.5	29.82	757.5	63.7	17.6	61	SW	7	3	.....	.....	6ck	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.76	755.9	29.78	756.3	62.8	17.1	61	WSW	9	4	.....	.....	2ck;s	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.30	744.3	29.91	759.8	72.0	22.2	49	NNW	4	2	.....	.....	2k	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.02	762.6	30.10	764.4	79.2	26.2	48	Calm	0	0	.....	.....	1k	.....	.....	.....	.....	.....	Kordalcof.
Kertch	30.01	762.3	30.03	762.8	76.8	24.9	73	N	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.37	746.0	29.91	759.7	59.2	15.1	51	NE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.72	754.9	29.92	759.9	74.3	23.5	37	NW	9	4	.....	.....	4ks	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.61	752.2	29.63	752.7	50.2	10.1	74	WNW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.65	727.8	30.03	762.8	70.7	21.5	52	SE	4	2	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.89	759.3	29.81	757.2	74.7	23.7	29	W	18	8	.....	.....	2cs;s	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.02	737.0	29.48	748.8	49.6	9.8	80	NW	11	5	.....	.....	8n	.....	.....	Blank	Blank	.....	Cand. Fatjanow.
Kasan	29.26	743.1	29.52	749.9	51.8	11.0	75	W	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.50	723.8	29.41	747.0	57.2	14.0	67	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.79	756.7	30.02	762.5	68.2	20.1	46	WNW	9	4	.....	.....	3k	.....	.....	.....	.....	.....	
Tashkend	28.53	724.6	30.21	767.3	63.7	17.6	68	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.17	741.0	29.68	753.9	59.5	15.3	67	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.47	748.5	29.76	755.8	48.9	9.4	87	SW	4	2	.....	.....	9	.....	.....	.....	.....	Raining	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.80	756.8	29.94	760.4	67.6	19.8	74	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 499 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.84	757.9	29.94	760.5	80.2	26.8	62	S	1.5	0.67	.....	2	6	SW	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.98	761.4	30.03	762.8	79.2	26.2	50	E	1.7	0.78	.....	2	.....	NE	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.12	688.8	.....	.....	77.5	25.3	53	N	5.3	2.36	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.81	706.3	29.89	759.2	90.1	32.3	35	W	6.0	2.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.80	757.0	29.95	760.6	89.8	32.1	50	E	2.2	1.00	.....	.....	.....	.....	.....	0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.08	735.5	29.94	760.4	76.3	24.6	77	N	4.3	1.94	.....	2	0	.....	.....	0	0	Almost clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.3	29.96	761.0	78.3	25.7	89	Calm	0	0	.....	3c	0	NNW	.....	0.315	8.0	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.86	758.3	29.95	760.7	92.1	33.4	28	E	15.0	6.7	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.84	757.8	29.93	760.3	82.4	28.0	95	SE	0	0	.....	4kn	3k	SE	SE	0.205	5.20	D. clouds.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.29	743.9	29.33	744.9	50.0	10.0	.....	S	.....	.....	4	.....	8	.....	.....	0	0	.....	
Umea	29.40	746.8	29.45	748.1	55.4	13.0	89	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Hernosand	29.23	742.4	29.28	743.7	62.6	17.0	54	SW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Stockholm	29.47	748.5	29.65	753.0	65.5	18.6	70	SW	.....	.....	6	.....	8	.....	.....	0	0	.....	
Wisby	29.73	755.2	29.79	756.7	64.8	18 2	67	WSW	.....	.....	7	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.52	749.8	29.60	751.7	64.0	17.8	68	SW	17.9	8.0	.....	.....	10	.....	WSW	0.019	0.48	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.8	29.98	761.6	60.4	15.8	58	NNW	.....	.....	3	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.41	721.6	30.04	762 9	57.6	14.2	83	E	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.3 mm.; Thermometer, —2.5 cent.; Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.94	760.5	72.1	22.3	62	NNE	14	6.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	29.99	761.8	69.4	20.8	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Rainy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.73	755.1	29.84	758.0	89.4	31.9	53	W	.....	.....	2	.....	1c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.58	751.3	29.65	753.1	73.0	22.8	89	SW	23	10.3	.....	.....	7n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Brockville, Ontario	29.47	748.5	29.77	756.1	54	12.2	.....	SW	10	4.5	.....	.....	8s	.....	W	0.61	15.5	Cloudy	W. R. Bigg.
*Chatham, N B	29.65	753.1	29.71	754.6	73	22.8	92	S	17	7.6	.....	2k	8n	S	S	0.04	1.0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	71	21.7	91	S	16	7.2	.....	0	5ks	.....	S	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.55	750 6	29.74	755.4	56.6	13.7	77	W	.....	.....	5	.....	9s	.....	.....	0.110	2.79	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.47	748.5	29.63	752.6	66.8	19.3	97	E	.....	.....	1	.....	.....	.....	.....	0.13	3.3	Overcast	H. A. Johnson.
Esquimault, B. C	29.96	761.0	30.00	762.0	52.3	11.3	93	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.54	750.3	29.56	750.8	59	15.0	82	SW	35	15.6	.....	.....	10n	.....	SW	0.04	1.0	Cloudy	J. McWilliams.
Fredericton, N. B	29.72	754.9	29.78	756.4	69.8	21.0	87	SW	7	3.1	.....	.....	10n	.....	.....	0.092	2.34	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.12	739.6	29.95	760.7	47	8.3	96	S	5	2.2	.....	.....	10n	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	28.84	732.5	29.92	760.0	49	9.4	100	W	.....	.....	1	.....	10n	.....	.....	0.35	8.9	Overcast	James Grant.
*Halifax, N. S	29.77	756.1	29.90	759.4	72	22.2	95	SW	17	7.6	.....	.....	10n	.....	SW	0.095	2.41	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.55	750.6	29.92	760 0	53.1	11.7	76	W	.....	.....	5	4k	0	W	.....	0.35	8.9	Clearing	Geo. Dickson, M. A.
Heart's Content, N. F	29.99	761.7	30.01	762.2	61	17.8	94	SW	.....	.....	3	.....	10	.....	.....	0.18	4.6	Foggy	E. Weedon.
*Kingston, Ontario	29.45	748 0	29.78	756.4	57	13.9	88	SW	33	14.8	.....	.....	10ks	.....	SW	0.84	21.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.95	760.7	29.99	761.7	76.5	24.7	78	SW	14	6.3	.....	5k	0	SW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.56	750.8	29.75	755.6	56	13.3	81	SW	16	7.2	.....	0	5ks	.....	W	0.21	5.3	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.98	736.1	29.67	753.6	48	8.9	91	SW	36	16.1	.....	5k	5n	SW	SW	1.28	32.5	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.07	738.4	29.81	757.2	55.2	12.9	71	W	.....	.....	5	3k	0	.....	.....	1.02	25.9	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.27	743.4	29.95	760.7	55	12 8	81	W	12	5.4	.....	0	0	.....	.....	0.17	4.3	Clear	H. Morgan.
Port Hastings, N. S	29.91	759.7	29.96	761 0	71.6	22.0	.....	SW	12	5.4	.....	.....	.....	.....	.....	0	0	Cloudy	Peter Grant.
Port Stanley, Ontario	29.34	745.2	29.99	761.7	53	11.7	80	W	28	12.5	.....	2ck	0	W	.....	0.03	0.8	Clear	M. Payne.
*Quebec, Quebec	29.43	747 5	29.74	755.4	57	13.9	81	S	.....	.....	7	2k	2n	S	S	0.16	4.1	Clearing	Capt. Ashe, R. N
*Rockliffe, Ontario	29.12	739 6	29.58	751 3	49	9.4	75	W	10	4.5	.....	.....	8s	.....	W	2.71	68.8	Cloudy	W. H. McIntyre.
St. Andrews, N. B	29.75	755.6	29.80	756 9	63	17.2	97	SW	5	2.2	.....	.....	Fog	.....	.....	0.21	5.3	Foggy	Dr. Gove.
St. John, N. B	29.66	753.4	29.82	757.4	61	16.1	100	S	17	7.6	.....	.....	Fog	.....	.....	0.56	14.2	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.11	739.4	29.81	757.2	51	10.6	81	W	40	17.9	.....	.....	10n	.....	NW	0.83	21.1	Cloudy	K. Stewart.
Stayner, Ontario	29.01	736.8	29.78	756.4	50	10.0	86	NW	9	4.0	.....	.....	10n	.....	W	0.26	6.6	Light rain	R. J. Cole.
Stratford, Ontario	28.63	727.2	29.90	759.4	49.1	9.5	91	W	17	7.6	.....	4ck	4ks	W	.....	0.344	8.74	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.98	761.5	30.01	762.2	73	22.8	86	SW	9	4.0	.....	0	8ks	.....	SW	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.48	748.8	29.86	758.4	52	11.1	83	SW	17	7.6	.....	2cs	5ks	W	W	0.46	11.7	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	66.0	18.9	94	SW	.....	.....	.....	5ks	5sn	.....	.....	0.02	0.5	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.70	754.4	29.92	760.0	60	15.6	55	W	9	4.0	.....	0	0	.....	.....	0.54	13.7	Clear	
Alpena, Michigan	29.22	742.2	29.86	758.4	51	10.6	86	NW	15	6.7	.....	10cs	0	Calm	.....	1.43	36.3	Cloudy	
Atlantic City, New Jersey	30.03	763.5	30.08	764.0	60	15.6	70	NW	11	4.9	.....	2k	0	W	.....	0.97	24.6	Clear	
Augusta, Georgia	29.96	761.0	30.15	765.8	66	18.9	64	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Baltimore, Maryland	30.06	763.5	30.11	764.8	60	15.6	65	W	4	1.8	.....	0	Sm'e	.....	Calm	0.31	7.9	Clear	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	61	16.1	61	NW	16	7.2	.....	2k	0	NW	.....	0.21	5.3	Clear	
Bismarck, Dakota	28.18	715.8	30.04	763.6	48	8.9	85	N	6	2.7	.....	.....	Haze	.....	.....	0	0	Dense haze	
Boerne, Texas	28.68	728.5	.....	.....	59	15.0	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.08	687.8	30.04	763.0	40	9.4	57	SW	4	1.8	.....	10k	Sm'e	W	Calm	0	0	Cloudy	
Boston, Massachusetts	29.78	756.4	29.93	760.2	66	18.9	69	W	11	4.9	.....	1cs	0	W	.....	0.16	4.1	Clear	
Brackettville, Texas	29.00	736.6	30.12	765.0	62	16.7	72	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.95	735.3	29.96	761.0	41	5.0	100	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.07	763.8	30.14	765.5	63	17.2	88	NE	3	1.3	.....	5k	0	E	.....	0	0	Fair	
Buffalo, New York	29.21	741.9	29.89	759.2	58	14.4	64	SW	36	16.1	.....	5k	0	W	.....	0.20	5.1	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.62	752.3	29.87	758.7	62	16.7	50	SW	4	1.8	.....	5k	0	W	.....	0.14	3.6	Fair	
Cairo, Illinois	29.78	756.4	30.18	766.6	56	13.3	94	SW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Camp Apache, Arizona	.....	.....	.....	.....	54	12.2	61	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	63	17.2	26	N	.....	.....	2	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.78	680.2	30.29	769.4	60	15.6	55	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.42	696.5	29.99	761.7	48	8.9	42	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.06	763.5	30.06	763.5	75	23.9	81	NE	3	1.3	.....	8k	0	SW	.....	0.02	0.5	Fair	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	69	20.6	65	NW	23	10.3	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.06	763.5	30.08	764.0	71	21.7	85	NE	16	7.2	.....	5k	0	W	.....	0	0	Fair	
Cape May, New Jersey	30.09	764.3	30.12	765.0	63	17.2	62	N	22	9.8	.....	5k	0	W	.....	0.11	2.8	Fair	
Castroville, Texas	29.35	745.5	30.06	763.5	56	13.3	81	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.07	763.8	30.14	765.5	69	20.6	75	NE	13	5.8	.....	5cs	2s	W	W	0	0	Fair	
Cheyenne, Wyoming	24.05	610.9	29.93	761.7	42	5.6	74	NW	4	1.8	.....	2cs	0	Calm	.....	0	0	Clear	
Chicago, Illinois	29.42	747.3	30.12	765.0	48	8.9	78	SW	8	3.6	.....	8cs	Fog	NW	.....	0.05	1.3	Cloudy	
Cincinnati, Ohio	29.52	749.8	30.18	766.6	53	11.7	80	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.36	745.7	30.09	764.3	51	10.6	79	SW	14	6.3	.....	0	0	.....	.....	0.19	4.8	Clear	
Coleman City, Texas	28.30	718.8	29.98	761.5	51	10.6	93	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.32	744.7	30.16	766.1	50	10.0	71	W	4	1.8	.....	0	Sm'e	.....	Calm	0.01	0.3	Clear	
Concho, Texas	28.18	715.8	29.85	758.2	55	12.8	74	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.68	753.9	30.15	765.8	57	13.9	81	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.52	749.8	30.17	766.3	48	8.9	85	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Decatur, Texas	28.94	735.1	30.10	764.5	59	15.0	48	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.30	744.2	30.09	764.3	60	15.6	77	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.81	630.2	30.03	762.7	49	9.4	37	SE	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.04	763.0	55	12.8	62	E	2	0.9	.....	0	Haze	.....	Calm	0	0	Hazy	
Detroit, Michigan	29.37	746.0	30.04	763.0	50	10.0	79	SW	8	3.6	.....	0	1s	.....	Calm	0.05	1.3	Clear	
Dodge City, Kansas	27.34	694.4	29.56	750.8	59	15.0	59	SW	8	3.6	.....	2cs	0	NW	.....	0	0	Fair	
Dubuque, Iowa	29.43	747.5	30.15	765.8	42	5.6	91	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.38	746.2	30.06	763.5	49	9.4	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.31	744.5	30.06	763.5	56	13.3	87	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.75	755.6	29.81	757.2	66	18.9	95	S	12	5.4	.....	.....	Fog	.....	.....	0.19	4.8	Foggy	
Edinburg, Texas	.....	.....	.....	.....	62	16.7	82	N	.....	.....	1	5c	0	Calm	.....	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	64	17.8	56	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.29	744.0	30.00	762.0	55	12.8	68	SW	9	4.0	.....	8k	0	W	.....	0.03	0.8	Cloudy	
Escanaba, Michigan	29.33	745.0	29.98	761.5	48	8.9	70	NW	10	4.5	.....	5ck	0	NW	.....	0	0	Fair	
Florence, Arizona	28.44	722.4	30.04	763.0	72	22.2	49	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.58	649.7	29.64	752.8	48	8.9	77	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	60	15.6	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.54	750.3	30.07	763.8	62	16.7	72	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.78	731.0	30.05	763.3	55	12.8	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.87	707.9	29.75	755.6	64	17.8	63	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.83	732.3	29.94	760.5	53	11.7	86	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.38	720.8	29.92	760.0	65	18.3	73	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.10	764.5	30.14	765.5	69	20.6	80	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.40	746.7	30.04	763.0	57	13.9	69	N	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.39	746.5	30.18	766.6	50	10.0	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.13	765.3	30.16	766.1	72	22.2	71	E	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.91	734.3	30.03	762.7	61	16.1	61	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.02	762.5	30.04	763.0	73	22.8	72	N	6	2.7	.....	5k	0	S	.....	0	0	Fair	
Keokuk, Iowa	29.49	749.0	30.11	764.8	50	10.0	72	SE	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Key West, Florida	29.94	760.5	29.97	761.2	82	27.8	83	E	4	1.8	.....	5c	1ks	Calm	E	0	0	Fair	
Kittyhawk, North Carolina	30.05	763.3	30.07	763.8	71	21.7	78	NE	25	11.2	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.24	741.9	30.22	767.6	53	11.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.37	746.0	30.12	765.0	44	6.7	92	S	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	53	11.7	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.70	754.4	30.05	763.3	59	15.0	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.85	631.2	30.12	765.0	40	4.4	91	NW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Leavenworth, Kansas	29.14	740.1	29.98	761.5	55	12.8	74	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.54	750.3	29.87	758.7	66	18.9	50	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.64	752.8	30.20	767.1	54	12.2	80	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Lynchburg, Virginia	29.46	748.3	30.13	765.3	63	17.2	57	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.26	743.2	29.95	760.7	55	12.8	68	W	12	5.4	.....	5c	0	W	.....	0	0	Fair	
Mason, Texas	28.46	722.9	30.17	766.3	69	20.6	47	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.90	759.4	30.22	767.6	54	12.2	73	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Milwaukee, Wisconsin	29.37	746.0	30.10	764.5	49	9.4	71	W	14	6.3	.....	5c	0	NW	.....	0	0	Fair	
Mobile, Alabama	30.12	765.0	30.17	766.3	59	15.0	76	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.93	760.2	30.16	766.1	58	14.4	69	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.10	739.1	30.14	765.5	57	13.9	87	SW	3	1.3	.....	2k	5ks	SW	SW	0.12	3.0	Cloudy	
Mt. Washington, N. H.	23.65	600.7	30.01	762.2	36	2.2	100	NW	43	19.2	.....	.....	Fog	.....	NW	1.68	42.7	Foggy	
Nashville, Tennessee	29.70	754.4	30.24	768.1	53	11.7	80	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
New Haven, Connecticut	29.88	758.9	30.00	762.0	67	19.4	69	W	5	2.2	.....	0	0	.....	.....	0.08	2.0	Clear	
New London, Connecticut	29.94	760.5	29.99	761.7	66	18.9	69	W	6	2.7	.....	0	1s	.....	Calm	0.05	1.3	Clear	
New Orleans, Louisiana	29.10	761.5	30.16	766.1	66	18.9	64	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	23.93	760.2	29.98	761.5	65	18.3	68	W	16	7.2	.....	1k	0	.....	.....	0.07	1.8	Clear	
New York, New York	29.88	758.9	30.05	763.3	59	15.0	94	W	17	7.6	.....	0	0	.....	.....	0.08	2.0	Clear	
Norfolk, Virginia	30.04	763.5	30.12	765.0	69	20.6	65	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.01	686.0	29.57	751.1	44	6.7	92	SE	2	0.9	.....	5c	Fog	W	Calm	0	0	Fair	
Olympia, Washington Ter.	29.97	761.2	30.01	762.2	42	5.6	100	S	2	0.9	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.87	733.3	29.94	760.5	52	11.1	79	SE	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Oswego, New York	29.59	751.6	29.90	759.4	57	13.9	69	SW	12	5.4	.....	5k	0	W	.....	0.73	18.5	Fair	
Pembina, Dakota	29.13	739.9	29.96	761.0	44	6.7	92	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Philadelphia, Pa	30.01	763.0	30.09	764.3	59	15.0	65	Calm	0	0	.....	0	0	.....	.....	0.25	6.3	Clear	
Phœnix, Arizona	28.75	730.2	.....	.....	72	22.2	50	SE	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.98	454.8	30.18	766.6	32	0.0	59	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.03	610.4	29.80	756.9	56	13.3	29	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.	
Pittsburg, Pennsylvania	29.30	744.2	30.10	764.5	53	11.7	80	SW	10	4.5	.....	0	0	.....	.....	0.02	0.5	Clear	
Port Huron, Michigan	29.31	744.5	29.96	761.0	55	12.8	68	W	14	6.3	.....	8cs	0	W	.....	0.18	4.6	Fair	
Portland, Maine	29.78	756.4	29.83	757.7	64	17.8	63	SW	16	7.2	.....	1k	0	Calm	.....	0.04	1.0	Clear	
Portland, Oregon	29.98	761.5	30.08	764.0	52	11.1	86	SW	1	0.4	.....	.....	10s;sm	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.83	630.7	30.19	766.8	53	11.7	51	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.34	745.2	30.16	766.1	59	15.0	69	SE	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.00	762.0	30.02	762.5	78	25.6	73	NE	8	3.6	.....	5ck	0	E	.....	0	0	Fair	
Red Bluff, California	29.55	750.6	29.91	759.7	57	13.9	63	SE	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.97	761.2	30.19	766.8	61	16.1	40	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.28	743.7	29.88	758.9	56	13.1	69	W	12	5.4	.....	0	0	.....	.....	0.07	1.8	Clear	
Roseburg, Oregon	29.51	749.5	30.09	764.3	40.5	4.7	91	Calm	0	0	.....	10k	Sm'e	N	Calm	0	0	Cloudy	
Sacramento, California	29.84	757.9	29.92	760.0	56	13.3	75	S	8	3.6	.....	0	Haze	.....	Calm	0	0	Hazy	
St. Louis, Missouri	29.62	752.3	30.20	767.1	54	12.2	67	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.07	763.8	30.08	764.0	63	17.2	67	N	4	1.8	.....	2c	0	W	.....	0	0	Fair	
St. Paul, Minnesota	29.20	741.7	30.04	763.0	44	6.7	75	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.54	648.7	29.86	758.4	59.0	15.0	33	E	1	0.4	.....	5k	0	W	.....	0	0	Fair	
San Antonio, Texas	29.45	748.0	30.03	762.7	56	13.3	87	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.83	757.7	29.90	759.4	66	18.9	50	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.43	747.5	30.10	764.5	53	11.7	80	SW	14	6.3	.....	0	0	.....	.....	0.06	1.5	Clear	
Sandy Hook, New Jersey	30.00	762.0	30.04	763.0	64	17.8	68	NW	20	8.9	.....	0	0	.....	.....	0.11	2.8	Clear	
San Francisco, California	29.92	760.0	29.98	761.5	55	12.8	84	SW	8	3.6	.....	0	5s	.....	SW	0	0	Fair	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	47	8.3	34	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.02	762.5	30.11	764.8	67	19.4	84	NW	4	1.8	.....	10k	0	S	.....	0	0	Cloudy	
Shreveport, Louisiana	29.98	761.5	30.20	767.1	60	15.6	76	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.37	619.0	.....	.....	49	9.4	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.09	764.3	30.13	765.3	67	19.4	74	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.82	757.4	29.95	760.7	67	19.4	55	W	6	2.7	.....	0	0	.....	.....	0.17	4.3	Clear	
Stockton, Texas	27.02	686.3	30.02	762.5	59	15.0	48	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.87	758.7	29.92	760.0	64	17.8	94	W	17	7.6	.....	1c	0	W	.....	0	0	Clear	
Toledo, Ohio	29.38	746.2	30.06	762.5	53	11.7	80	SW	12	5.4	.....	0	0	.....	.....	0.07	1.8	Clear	
Tucson, Arizona	27.23	691.6	29.78	756.4	68	20.0	64	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.07	763.8	30.10	764.5	71	21.7	85	NE	15	6.7	.....	.....	10ks	.....	W	0	0	Cloudy	
Umatilla, Oregon	29.65	753.1	.....	.....	42	5.6	74	Calm	0	0	.....	.....	Sm'e	.....	Calm	0	0	Smoky	
Unalashka, Aleutian Islands	.....	.....	.....	.....	47	8.3	100	SE	.....	.....	6	.....	10n	.....	SE	0.09	2.3	Raining	
Uvalde, Texas	29.25	742.9	30.06	763.5	60	15.6	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.28	616.7	29.76	755.9	38	3.3	72	SW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.58	751.3	29.94	760.5	65	18.3	39	NW	4	1.8	.....	10ck	0	Calm	.....	0	0	Cloudy	
Washington, D. C	30.02	762.5	30.13	765.3	58	14.4	70	NW	5	2.2	.....	0	0	.....	.....	0.20	5.1	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	54	12.2	67	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.10	764.5	66	18.9	73	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.57	649.5	29.93	760.2	43	6.1	28	SW	6	2.7	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Wood's Holl, Mass	29.91	759.7	29.96	761.0	67	19.4	79	W	10	4.5	.....	8c;cs	0	W	.....	0.01	0.3	Cloudy	
Yankton, Dakota	28.69	728.7	29.98	761.5	45	7.2	84	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.67	753.6	29.83	757.7	69	20.6	79	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.00	762.0	30.05	763.3	34.5	1.4	95	NW	9	4.0	.....	2c	0	NW	.....	0.01	0.3	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.95	760.7	29.97	761.2	81	27.2	87	SE	2.4	1.1	.....	8c	0	Calm	.....	0.13	3.3	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.91	759.7	29.94	760.5	79	26.1	86	N	.....	.....	1	8ck	0	NE	.....	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	83	NE	6	2.7	.....	2c	5n	E	.....	0.22	5.6	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.09	764.3	30.10	764.5	78	25.6	90	Calm	0	0	.....	8c	2ks	Calm	SE	0.50	12.7	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	83	28.3	.....	E	7.9	3.5	.....	.....	.....	.....	.....	0.65	16.5	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	84	28.9	68	E	.....	.....	2	0	4k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.25	641.3	.....	.....	65.0	18.3	90	Calm	0	0	.....	.....	10n	.....	.....	0.40	10.2	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,560 (?) ft., or 1,085.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622.7 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,886 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.22	767.6	65	18.3	65	18.3	68	N	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H.	29.96‡	761.0‡	.....	.....	61	16.1	55	SW	9	4.0	.....	.....	5?	.....	.....	0	0	.....	.....	Clear?	
Naval Hospital, Yokohama, Japan.....	30.00*	762.0*	78.5	25.8	78.6	25.9	91	E	.....	.....	1	.....	9ks	....	SW	0	0	.....	.....	Cloudy.....	
Adams. S. 44° 13', W. 159° 47'.....	30.51	774.9	59	15.0	51	10.6	93	N	.....	.....	4–5	.....	10	.....	N	0	0	Mod'ate	N	Cloudy.....	
Alliance, Villafranca, France	29.77‡	756.1‡	.....	.....	76	24.4	59	E	.....	.....	0–1	.....	1	.....	NE	.....	.....	.....	.....	Hazy.....	
Arhuelot. Yokohama, Japan	30.08	764.0	81	27.2	81	27.2	91	NNE	.....	.....	1	.....	10	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Alaska, S. 44° 02', W. 77° 02'..	30.19	766.8	55	12.8	47	8.3	77	NNE	.....	.....	5	.....	2	.....	SW	0.05	1.3	Long	NE	D. clouds.....	
Canonicus, New Orleans, La.....	30.18	766.6	52	11.1	76	24.4	77	NNW	.....	.....	4	.....	1	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	30.05‡	763.3‡	.....	.....	61	16.1	66	WNW	12	5.4	.....	.....	0	.....	.....	0.13	3.3	.....	.....	Hazy...	
Constitution, Havre, France.....	30.07‡	763.8‡	.....	.....	62	16.7	88	W	.....	.....	2	.....	4	.....	W	.....	.....	.....	.....	Clear.....	
Despatch, Volo, Turkey.....	29.98‡	761.5‡	.....	.....	78	25.6	47	SSE	.....	.....	3	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.21	767.3	73	22.8	71	21.7	66	NNW	14	6.3	.....	.....	2	.....	S	0	0	.....	.....	Clear.....	
Gettysburg Villafranca, France.....	29.79*	756.7‡	.....	.....	83	28.3	87	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Guard. Bahia, Brazil.....	30.15	765.8	79	26.1	78	25.6	78	ENE	.....	.....	2	.....	8	.....	E	.....	.....	.....	.....	Hazy	
Hartford, Rio de Janeiro, Brazil ...	29.94	760.5	.....	.....	77	25.0	82	E	2.4	1.1	.....	....	8	.....	.....	0	0	.....	.....	Hazy.....	
Marion. Naples, Italy.....	29.99	761.7	76	24.4	75	23.9	86	SSW	.....	.....	1	.. ..	8	.....	SSW	Light	Light	.....	.....	Fair.....	
Michigan. Erie, Pa.....	29.97†	761.2†	.....	.....	54	12.2	80	S	.....	.....	4	.....	8	.....	S	.....	.....	.....	.....	Cloudy.....	
Monocacy. Ura-no-go-ura, Japan.....	29.98‡	761.5‡	.....	.....	79	26.1	86	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.....	30.27‡	768.8†	.....	.....	71	21.7	80	NNE	15	6.7	.....	.....	10	.....	SW	0	0	.....	.....	Cloudy	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	63	17.2	89	NNW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.21	767.3	60	15.6	60	15.6	100	NW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China.....	30.03	762.7	73	22.8	71	21.7	75	S	.....	.....	1	.....	2	.....	W	.....	.....	.....	.....	Clear	
Plymouth. New York, N. Y..... ...	30.10	764.5	63	17.2	60	15.6	71	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	29.92	760.0	80	26.7	79	26.1	91	E	.....	.....	4–5	.....	10	.....	W	.....	.....	.....	.....	Rainy	
Rio Bravo, Brownsville, Texas.....	30.06	763.5	66	18.9	65	18.3	94	NW	.....	.....	2	.....	2	.....	N	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.10‡	764.5‡	.....	.....	64	17.8	62	WNW	.....	.....	1	.....	2	.....	NW	0.21	5.3	.....	.....	Clear.....	
Saratoga, League Island, Pa	30.03*	762.7*	.....	.....	59	15.0	70	WSW	.....	.....	4	.....	10?	.....	E	0	0	.....	.....	Clear.	
St. Louis, League Island, Pa	30.03	762.7	64	17.8	59	15.0	70	W	1	0.4	.....	.....	0	.....	.....	0.03	0.08	.....	.....	Clear.....	
Supply, Havre, France.....	30.14	765.5	64	17.8	64	17.8	68	NNW	.....	.....	1	.....	5	.....	NNW	.....	.....	.....	.....	Fair.....	
Swatara. Boston, Mass.....	29.92‡	760.0‡	.....	.....	66	18.9	74	W	.....	.....	3	.....	2	.....	..... .	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	30.00‡	762.0‡	.....	.....	72	22.2	62	NW	.....	.....	3	.....	8	.....	N;W	1.6	41.	.....	.....	Cloudy.....	
Tuscarora. La Paz, Mexico.....	29.71	754.6	78	25.6	81	27.2	87	S	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia. Villafranca, France.....	29.77‡	756.1‡	.....	.....	77	25.0	65	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	29.93‡	760.2‡	.....	.....	69	20.6	70	WNW	8	3.6	.....	.....	2	.....	Calm	0.08	2.0	.....	.....	Fair..... ...	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co operation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S City of Peking, N. 36° 10′, W. 152° 48′		30.26†	768.6†	73	22.8	85	SSW	8	3.6		10		NW			Small	WNW	Overcast	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, Victoria, B. C.		30.02†	762.5†	57	13.9	81	Calm			0		0			0			Foggy	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 27° 46′, E. 126° 21′		29.58*	751.3*	83	28.3	79	NNE			5		n		NNE		Rough	NNE	Squally	Capt. L. Myer.
S. S. Gaelic, N. 25° 20′, E. 120° 22′		29.76†	755.9†	82	27.8	??	NE			5		ks		NE	0	High	NE	D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 48° 7′, W. 32° 56′		29.84	757.9	65.5	18.6	76	WSW			3		5		SW		4	WSW	Fine	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 39° 59′, W. 65° 12′		30.11*	764.8*	80	26.7	91	SSW			4		3		SSW	Slight	Mod'ate	SSW	Hazy	Captain Sargent.
S. S. Ohio, N. 51° 50′, W. 23° 05′		29.66	753.4	62	16.7	94	SW			4		10		SW	Small	Sm all	NW	Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 32° 27′, W. 68° 18′		30.05	763.3	83	28.3	79	S	11	4.9			2cs		SW	0.02 in or 0.5 mm.	Short		Clear	Capt. James Jorgensen.
Schooner Florence, Near Cape Enderby, N. 63° 45′, W. 65° 30′		30.35*	770.9*	34.8	1.6		W			2.0		10ks			0			Cloudy	O. T. Sherman.

NOTE —The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 15, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.09	764.2	72.1	22.3	87	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	30.05	763.2	80.2	26.8	74	NW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Kesxuche.
Algiers	.....	.....	30.00	762 0	82.8	28.2	69	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Tourillere.
La Calle	.....	.....	30.04	763.1	84.2	29.0	64	NE	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Foufrede.
Tunis	.....	.....	30.01	762.3	79.7	26.5	68	W	.....	.....	3	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.11	764.7	82 4	28 0	.....	W	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	30.07	763.6	86.4	30.2	20	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.04	763.1	81.7	27.6	29	SW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	30.08	763.9	82.4	28.0	51	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	Brugnlaux.
Laghouat	.....	.....	30.11	764.8	83.1	28.4	41	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.08	763.9	91.4	33.0	30	ESE	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 8907 meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,563.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.35	745.4	29.87	758.7	75.6	24.2	64	NE	.....	.....	3	.....	8	.....	.....	1.205	30.6	.....	Prof. Ivan Stoːir.
Cracow, I. R. Observatory	29.22	742.2	29.95	760.8	76.3	24.6	56	E	.....	.....	3	.....	3	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.09	738.8	29.93	760.1	75.4	24 1	61	Calm	.....	.....	0	.....	1cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.71	729.2	29.92	759.9	68.9	20.5	80	E	.....	.....	2	.....	10	.....	.....	0.047	1.20	.....	Andreas Rospini.
Hermannstadt	28.61	724.8	29.97	761.1	72.5	22.5	49	SE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.62	726.9	29.93	760.3	61.9	16.6	78	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	29.09	736.7	29.95	760.6	73.4	23.0	69	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.76	755.6	29.86	758.4	63.7	17.6	97	NE	.....	.....	1	.....	10ks	.....	.....	1.445	36.7	.....	I.R.Hydrographic Office
Szathmar	29.53	750.0	29.97	761.2	78.8	26.0	47	SE	.....	.....	1	.....	2	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.63	752.7	29.90	759.4	82.6	28.1	75	S	.....	.....	1	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.76	755.9	29.86	758.5	67.3	19.6	93	Calm	.....	.....	0	.....	10	.....	.....	2.522	64.5	Thunder-storm	P. Busin.
Vienna	29.24	742.8	29.94	760.4	71.1	21.7	71	NE	.....	.....	1	.....	4	.....	.....	0	0	.....	I. R. Central Met. Ob's'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Passau.
Brussels	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.86	733.0	28.96	735.6	59.3	15.2	.....	S	36	16.1	.....	.....	9	.....	.....	0.275	6.99	Squally	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Carrick.
Armagh, Observatory	.....	.....	29.17	740.9	55.0	12.8	.....	WSW	14	6.3	.....	.....	.....	.....	.....	.....	.....	.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.42	747.3	61.9	16.6	.....	S	25	11.2	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.84	757.0	29.87	758.7	85.5	29.7	.....	S	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.69	754.1	67.0	19.4	.....	SSW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	29.70	754.4	65.0	18.3	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.69	754.1	29.82	757.4	65.2	18.4	.....	SE	.....	.....	6	.....	4	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.28	718.3	29.73	755.1	56.0	13.3	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	Squally.....	Alexander Watt.
Donaghadee	29.09	738.9	29.12	739.6	60	15.6	.....	WSW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.77	756.1	29.79	756.7	64	17.8	.....	SW	.....	.....	5	.....	5	.....	.....	.....	.....	½ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.47	748.5	60.2	15.7	.....	S	3.4	1.5	.....	.....	10	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.54	750.3	29.76	755.9	63.7	17.6	.....	SSW	.....	.....	6	.....	9	.....	.....	.....	.....	Overcast....	The Staff.
Fort Napier, (Natal)	27.58	700.5	29.88	758.9	82.6	28.1	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	85	29.4	.....	SW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	29.22	742.2	57	13.9	.....	WSW	.....	.....	7	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.97	761.2	.....	.....	.....	E	.....	.....	3	.....	0	.....	.....	.....	.....	Very fine.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.81	731.8	29.01	736.8	52.2	11.2	.....	WSW	.....	.....	8	.....	10	.....	.....	.....	.....	Squally.....	D. G. Maclean.
Great Yarmouth	29.74	755.4	29.71	755.4	65	18.3	.....	SSW	.....	.....	6	.....	3	.....	.....	.....	.....	D. clouds....	G. T. Watson.
Greenwich, Royal Obs'y	29.58	751.3	29.75	755.6	67.4	19.7	.....	SW	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.64	752.8	29.86	758.4	65.5	18.6	.....	SSW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.85	758.2	66	18.9	.....	SW	.....	.....	7	.....	3c	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	29.23	742.4	29.28	743.7	60	15.6	.....	SSW	.....	.....	8	.....	10	.....	.....	.....	.....	Raining	John Tilston.
Jersey	29.64	752.8	29.93	760.2	66.0	18.9	.....	SW	.....	.....	4	.....	7	.....	.....	.....	.....	Gloomy.....	J. Fisher.
Kew, Observatory	29.72	754.9	29.76	755.9	64.7	18.2	.....	SW	29	13.0	.....	.....	8	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.23	742.4	29.26	743.2	65	18.3	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	George Mitchell.
Leicester, Museum	.....	.....	29.63	752.6	61.2	16.2	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.96	761.0	30.03	762.7	81	27.2	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Sergt. Beckett.
Nairn	28.78	731.0	28.85	732.8	50	10.0	.....	S	.....	.....	7	.....	10	.....	.....	.....	.....	Raining	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.96	761.0	84.5	29.2	.....	E	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.38	746.2	29.56	750.8	61.7	16.5	.....	SSW	.....	.....	6	.....	10k;d	.....	S	0.005	0.13	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.07	738.4	29.58	751.3	59.4	15.2	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.71	754.6	62	16.7	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Plymouth	29.70	754.4	29.78	756.4	62.8	17.1	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.40	746.7	29.45	748.0	63	17.2	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Misty.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys.	.....	.....	28.76	730.5	50.4	10.2	.....	WSW	25	11.2	.....	.....	10	.....	.....	.....	.....	Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.92	760.0	73.8	23.2	.....	NE	.....	.....	1	.....	10	.....	.....	Blank	Blank	Overcast.....	Sergt. W. H. Lyne.
Sheffield	29.27	743.4	29.54	750.3	60.9	16.1	.....	S	.....	.....	6	.....	10	.....	.....	0.53	13.5	Overcast	W. F. Cooper.
Silloth Rectory	29.16	740.7	29.19	741.4	60.0	15.6	88	W	.....	.....	1	.....	10	.....	.....	0.830	21.08	Overcast.....	C. Edith Redford.
Stonyhurst, Observatory	29.01	736.8	29.42	747.3	57.9	14.4	.....	S	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.55	750.6	29.76	755.9	64.6	18.1	.....	SW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. C.H. Griffith, F.M.S
Thurso	.....	.....	28.80	731.5	52	11.1	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	John Trotter.
Truro, Royal Institution	.....	.....	29.77	756.1	66	18.9	.....	SW	.....	.....	8	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	.....	.....	29.40	746.7	61.5	16.4	.....	WSW	35	15.6	.....	.....	10	.....	.....	.....	.....	Squally.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.46	748.3	52.0	11.1	72	NW	.....	.....	2	.....	7kn	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.47	766.4	73.0	22.8	78	NNE	5.0	2.2	.....	3	8	.....	SSE	0	0	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	29.72	754.9	29.81	757.2	50.8	10.4	88	W	11	4.9	.....	.....	10	.....	.....	0.15	3.8	Drizzling.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. 0—10.	Clouds. Direction. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 28° 35', W. 27° 25'	.....	.....	30.09	764.3	81	27.2	.....	.....	.....	.....	5	.....	4	SSW	0	.....	D. clouds.....	Capt. D. W. A. Qualle
S. S. Peruvian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. H. Smith, R. N.
Schooner Traveller, N. 41° 0', W 62° 0'	.....	.....	29.98	761.5	70	21.1	.....	WNW	.....	.....	3	.....	7	.....	5	SSE;SSW	D. clouds.....	[R. Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.
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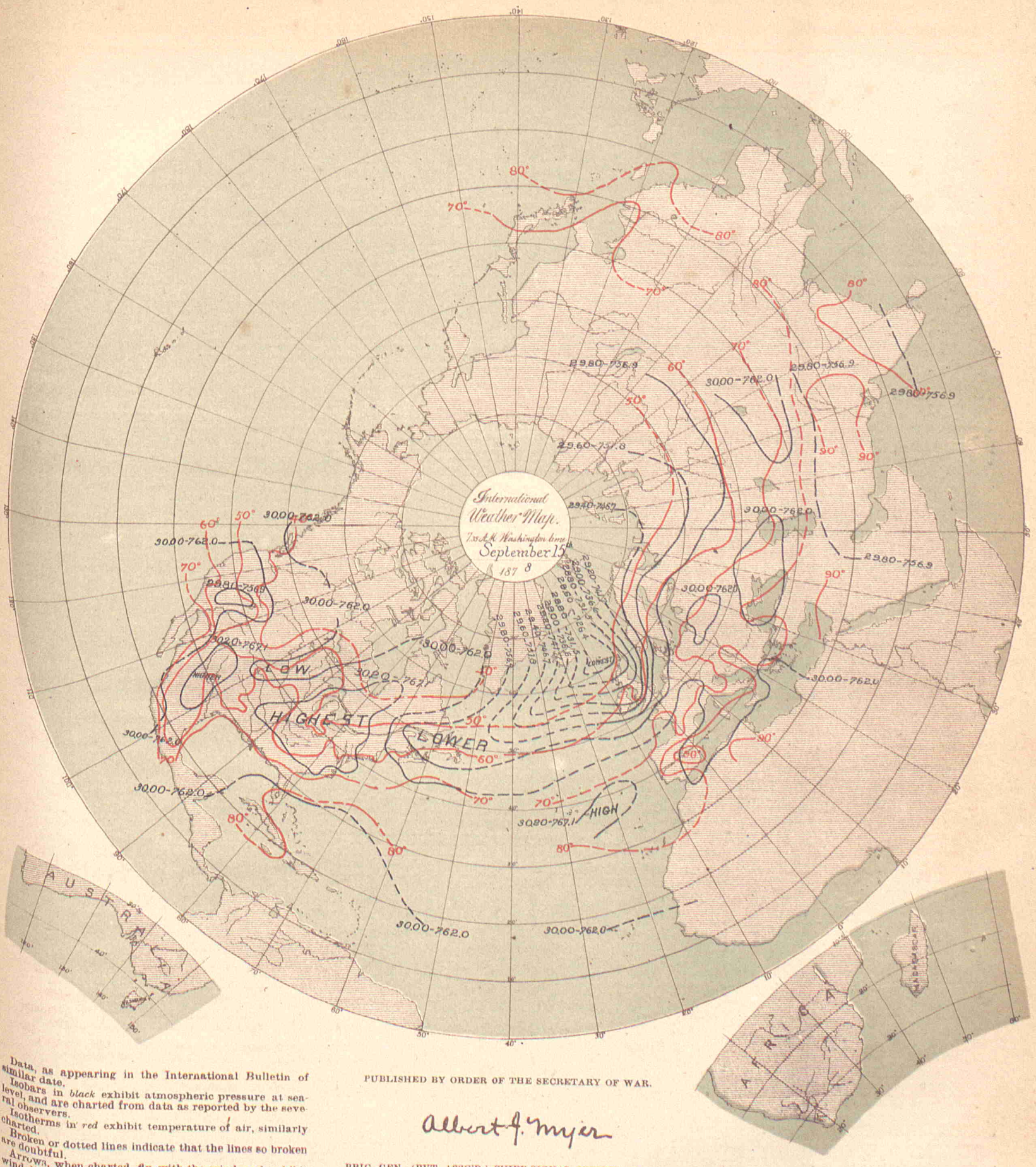
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity Miles per hour.	WIND. Velocity Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.23	666.2	.....	.....	68.0	20.0	95	N	.....	.....	1	.....	8ks	.....	.....	0.51	13.0	.....	Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.83	757.7	29.88	758.9	65.7	18.7	73	S	.....	.....	4	.....	2	.....	.....	.....	.....	.....	
Fanöe	29.72	754.8	29.74	755.3	64.6	18.1	81	SSW	.....	.....	6	.....	1	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	28.39	721.0	28.42	721.9	50.9	10.5	84	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	
Vestervig	29.57	751.1	29.74	755.4	63.7	17.6	82	SW	.....	.....	6	.....	5	.....	.....	.....	.....	.....	
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.50	749.4	30.06	763.4	61.9	16.6	77	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.88	759.0	29.96	761.0	75.2	24	40	N	.....	.....	2	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.48	748.7	30.02	762.5	65.3	18.5	55	W	.....	.....	1	.....	5cn	.....	.....	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Anvers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.70	754.4	29.98	761.5	65.7	18.7	63	SW	.....	.....	3	.....	5	.....	SSW	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.16	740.7	30.04	763.0	66.0	18.9	64	NNW	.....	.....	2	.....	5	.....	N	0	0	Cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.52	749.7	30.06	763.5	64.4	18	90	N	.....	.....	2	.....	2k	.....	NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.64	752.8	29.88	759.0	68.7	20.4	69	SW	.....	.....	3	.....	9	.....	SW	0	0	.....	The Staff.
Carcassonne, Normal School	29.54	750.3	29.94	760.4	73.0	22.8	41	SW	.....	.....	4	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.43	747.5	29.97	761.1	80.1	26.7	57	W	.....	.....	4	.....	5	SE	SE	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.71	754.7	30.02	762.6	67.1	19.5	82	SW	.....	.....	1	.....	5	SW	SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.70	728.9	30.01	762.3	68.4	20.2	51	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Alluard, Director.
Commercy, Normal School	29.20	741.6	30.07	763.6	61.7	16.5	72	NW	.....	.....	1	.....	2ckn	.....	NW	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.87	733.4	30.02	762.4	77.0	25.0	98	W	.....	.....	2	.....	2	SW	.....	0	0	¼ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.69	754.1	29.99	761.7	67.6	19.8	51	WSW	.....	.....	3	.....	2	.....	NW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.08	738.5	29.97	761.2	66.6	19.2	57	S	.....	.....	1	.....	1	.....	S	0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.06	763.4	30.09	764.3	65.1	18.4	77	N	.....	.....	1	.....	2	N	.....	0	0	Partly cl'dy	M. Galzin, Director
Mirecourt, Normal School	29.04	737.6	30.07	763.7	63.3	17.4	74	S	.....	.....	1	10c	.....	S	.....	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.78	756.5	30.00	762.0	79.5	26.4	62	N	.....	.....	4	2c	.....	NW	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.98	736 0	30.01	762.2	71.6	22	43	N	.....	.....	3	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.22	640.6	.....	.....	50.0	10.0	64	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	Alluard, Director.
Rochefort, Naval Obs'y	30.02	762.5	30.05	763.3	74.3	23.5	52	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.84	757.8	29.92	759.9	71.4	21.9	44	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	F. Lucard, Director.
Saint Malo (Port)	.....	.....	29.93	760.1	66.6	19.2	46	SSW	.....	.....	3	.....	1	.....	WNW	0	0	Clear	M. H. Hercouet.
Tarbes, Normal School	29.05	737.9	30.11	764.8	66.2	19	72	SSW	.....	.....	2	.....	2	ESE	S	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.72	754.8	29.74	755.5	81.3	27.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	5.	.....	L'Abbé Marchès.
Lyons	.....	.....	30.08	763.9	69.3	20.7	51	.....	.....	.....	.....	.....	1	.....	.....	0.008	0.2	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.92	759.9	76.5	24.7	30	W	.....	.....	2-3	.....	2	.....	.....	0	0	Partly cl'dy	The Staff.
Mont-Louis	25.01	635.2	30.32	770.2	69.1	20.6	36	WSW	.....	.....	3	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.93	760.3	74.8	23.8	69	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.69	754.2	29.97	761.2	70.5	21.4	50	SSW	.....	.....	3	.....	1	.....	SW	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.09	762.0	77.4	25.2	43	SE	3.7	1.67	.....	.....	8	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	576.0	.....	.....	59.9	15.5	.....	NW	.....	.....	2	.....	5	.....	.....	0	0	Fair	Gen'l de Nansouty
Saint Maur, (near Paris)	29.82	757.3	29.98	761.5	69.8	21.0	49	SW	.....	.....	2	.....	1	.....	SW	0	0	.....	E. Renou.
Toulouse, Observatory	29.37	745.9	30.09	764.3	72.1	22.3	37	NNW	.....	.....	2	.....	0	.....	.....	0	0	.....	The Staff.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Marquet.
Versailles	.....	.....	29.99	761.7	70.5	21.4	40	SW	.....	.....	1	.....	1	.....	.....	0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.91	759.6	29.93	760.2	64.0	17.8	93	NNW	2.5	1.1	.....	2ck	.....	.....	.....	0	0	Almost clear	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.96	760.9	64.4	18.0	80	Calm	.....	.....	0	.....	8	.....	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	29.78	756.4	29.95	760.6	71.6	22.0	66	N	.....	.....	1	.....	6	.....	.....	0.114	2.9	.....	Prof. Arndt.
Breslau	29.46	748.2	29.99	761.7	80.4	26.9	41	SE	.....	.....	3	.....	4	.....	.....	0.052	1.31	Sprinkling..	Royal University Obs'y
Carlsruhe	29.56	750.7	29.97	761.3	66.9	19.4	88	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	Albert Senz.
Cassel	29.34	745.1	29.94	760.5	69.4	20.8	60	N	.....	.....	2	.....	2	N	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.75	755.7	29.91	759.8	71.8	22.1	55	S	.....	.....	4	.....	7k	.....	.....	0	0	Dust-haze...	Director Lose.
Emden	29.80	756.8	29.83	757.7	68.0	20.0	89	S	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.69	751.9	29.96	760.9	70.3	21.3	.....	NNW	.....	.....	1	.....	2	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.58	726.0	29.99	761.8	62.2	16.8	80	WNW	.....	.....	2	.....	7	W	.....	0	0	.....	M. Wilhelm.
Hamburg	29.85	758.2	29.92	759.9	67 1	19.5	77	SSW	.....	.....	2	.....	7k	.....	.....	0	0	Cloudy.....	Captain F. Hegemann.
Kiel	29.86	758.4	29.87	758.8	67.1	19.5	65	SW	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.93	760.2	30.01	762.2	70.7	21.5	67	SE	.....	.....	2	.....	6	.....	.....	0.004	0.1	.....	Prof. E. Luther.
Köslin	.....	.....	29.93	760.2	67.1	19.5	.....	.....	.....	.....	.....	.....	3	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.57	751.1	29.98	761.5	69.8	21.0	77	SE	.....	.....	1	.....	9	.....	.....	0.051	1.3	.....	Prof. Bruhns.
Memel, Naval School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.97	761.1	29.98	761.5	76.3	24.6	55	SSE	.....	.....	2	.....	10	.....	.....	0	0	.....	A. Lothes.
Posen	29.73	755.1	30.00	762.1	74.5	23.6	59	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.48	748.7	30.02	762.4	66.7	19 3	68	N	.....	.....	1	.....	9	SW	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.06	738.2	29.99	761.7	62.1	16.7	77	N	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.43	747.4	29.95	760.7	68.0	20.0	52	WSW	.....	.....	3	.....	7	.....	.....	0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.56	723.9	29.97	761.2	59.7	15.4	89	S	2.2	1.0	.....	.....	10	.....	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.02	762.4	30.06	763.4	69.4	20.8	74	SE	.....	.....	1	.....	4	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.6	29.97	761.2	80.2	26.8	.....	SW	.....	.....	0.5	.....	.....	.....	.....	.....	.....	½ Clear	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the Coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.61	752.0	29.66	753.3	88.6	31.4	62	SW	4?	1.8?	.....	.....	0	.....	.....	0	0	Blue sky.....	
Deesa	29.20	741.6	29.66	753.4	91.6	33.1	63	Calm	.....	.....	.....	.....	3	NNE	.....	0	0	D. clouds.....	
Bombay	29.69	754.2	29.73	755.1	83.9	28.8	80	W	6	2.7	.....	.....	6	.....	WSW	0.10	2.5	D. clouds.....	
Poona	27.68	703.0	29.67	753.5	78.7	25.9	74	WSW	.....	.....	.....	.....	10	.....	WSW	0.03	0.8	Drizzling.....	
Lahore	28.94	734.9	29.66	753.3	92.1	33.4	56	NE	0.9	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Belgaum	27.25	692.2	29.81	757.1	71.2	21.8	91	W	9	4.0	.....	.....	10	.....	W	0.08	2.1	Drizzling....	
Roorkee	28.77	730.6	29.64	752.9	87.8	31.0	71	Calm	1	0.4	.....	.....	2	.....	.....	0	0	.....	
Agra	29.11	739.5	29.67	753.5	87.7	30.9	71	Calm	.....	.....	.....	.....	2	.....	.....	0	0	.....	
Nagpur	28.56	725.3	29.60	751.8	75.6	24.2	98	Calm	3.5	1.6	.....	.....	10	.....	E	2.57	65.3	Lightning...	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.30	744.2	29.61	752.0	83.3	28.5	89	NE	2.9	1.3	.....	.....	10	S	.....	0.08	2.1	Overcast....	
Patna	29.46	748.3	29.64	752.9	83.3	28.5	91	E	1.1	0.5	.....	.....	10	E	E	.....	.....	Thunder storm..	
Hazaribagh	27.63	701.7	29.62	752.4	78.8	26.0	85	E	13.9	6.2	.....	.....	9	.....	E	0.56	14.2	Raining	
Cuttack	29.48	748.8	29.56	750.8	85.0	29.4	79	SSE	4.1	1.8	.....	.....	5	.....	.....	0.51	13.0	D. clouds.....	
Calcutta (Alipore)	29.62	752.5	29.65	753.0	81.4	27.4	93	ESE	7.0	3.1	.....	.....	6	SE	.....	0	0	D. clouds.....	
Goalpara	29.29	744.0	29.68	753.8	84.2	29.0	71	Calm	10.5	4.7	.....	.....	1	.....	.....	0	0	D. clouds.....	
Chittagong	29.62	752.4	29.71	754.7	84.4	29.1	83	S	4.1	1.8	.....	.....	3	.....	.....	0	0	Misty.....	
Sibsagar	29.36	745.7	29.69	754.1	85.6	29.8	75	ENE	3.5	1.6	.....	.....	3	.....	.....	0	0	Blue sky.....	
Jubbulpore	28.22	716.7	29.56	750.9	82.6	28.1	84	NE	4.1	1.8	.....	.....	10	.....	.....	0.18	4.6	Overcast.....	
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.031 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.53	750.1	29.93	760.2	68.4	20.2	72	Calm	0	0	.....	.....	10	.....	.....	1.197	30.4	.....	Prof. Giovanni Clodig.
Padua	29.82	757.5	29.93	760.2	68.5	20.3	74	ENE	8.7	3.9	.....	.....	10	ENE	.....	1.429	36.3	.....	Prof. Dott. Lorenzoni
Vicenza	29.73	755.2	29.92	759.9	70.9	21.6	66	NE	1.8	0.8	.....	.....	4	.....	.....	2.591	65.8	.....	Conte Alm. Da Schio.
Bergamo	28.62	726.9	29.90	759.5	70.9	21.6	60	SW	.....	.....	1	.....	1	.....	.....	0.921	23.4	.....	Prof. Trionfini Carlo.
Milan	29.41	747.1	29.92	760.0	68.9	20.5	63	SE	.....	.....	2	.....	1	SSW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.02	737.1	29.90	759.4	72.7	22.6	48	SW	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.05	712.4	29.90	759.4	68.0	20.0	50	NW	.....	.....	2	.....	0	.....	.....	1.004	25.5	.....	Prof. D. C. Bruno.
Porto Maurizio	29.72	754.9	29.94	760.4	74.8	23.8	53	WSW	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.74	755.3	29.90	759.5	78.1	25.6	44	SW	.....	.....	2	.....	0	.....	.....	1.299	33.0	.....	Prof. G. M. Garibaldi.
Parma	29.63	752.6	29.93	760.3	72.7	22.6	51	WNW	.....	.....	2	.....	3	.....	.....	0.224	5.7	.....	Prof. P. Pigorini.
Florence	29.65	753.1	29.90	759.4	74.7	23.7	54	SE	.....	.....	2	.....	6	SE	.....	0.197	5.0	.....	Cav. F. Menceci
Leghorn	29.78	756.3	29.85	758.3	74.1	23.4	62	SSW	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.80	758.5	29.91	759.7	66.2	19.0	87	W	.....	.....	.....	.....	10	.....	.....	0.236	6.0	.....	Prof. Luigi Guidi.
Urbino	28.34	719.9	29.85	758.3	66.9	19.4	89	SW	.....	.....	2	.....	10	.....	.....	0.631	16.0	.....	Prof. P. Serpieri
Rome	29.78	756.4	29.95	760.7	75.7	24.3	61	W	19.9	8.9	.....	.....	5	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.77	756.2	29.97	761.2	76.5	24.7	68	SSW	.....	.....	2	.....	5	WSW	.....	0.780	19.8	.....	Prof. L. Palmieri.
Lecce	29.70	754.3	29.95	760.6	78.3	25.7	61	SW	3.1	1.4	.....	.....	3	SW	.....	0.035	0.9	.....	Prof. C. De Giorgi.
Cagliari	29.78	756.4	29.97	761.1	82.9	28.3	43	W	.....	.....	4	.....	4	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.12	739.7	29.98	761.5	78.4	25.8	69	NW	1.3	0.6	.....	.....	2	.....	.....	0.020	0.5	.....	Prof. F. D. Conti.
Palermo	29.75	755.7	30.00	762.0	80.8	27.1	49	ENE	6.3	2.8	.....	.....	7	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.93	760.2	30.00	762.1	80.6	27.0	67	SE	2.5	1.1	.....	.....	6	S	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.6	29.99	761.7	73.4	23.0	83	WSW	0.7	0.3	.....	.....	6	W	.....	0.551	14.0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.55	750.6	29.75	755.6	76.1	24.5	81	NNE	3.1	1.4	.....	.....	0	.....	.....	0	0	Clear	
Tokei (Yeddo) Observatory	29.69	754.1	29.75	755.6	74.0	23.3	98	S	19.1	8.5	.....	.....	10n	.....	.....	5.940	150.88	Stormy	I. Arai, Director.
Tokei (Yeddo) University	29.60	751.8	29.70	754.2	75.2	24	100	S	15	6.7	.....	.....	10n	.....	.....	4.59	116.59	Stormy	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.8	18.8	82	N	.....	.....	1	5ck	2s	.....	.....	0	0	½ cloudy	P. Ceballos.
Guadalajara	25.02	637.2	30.09	764.3	50.4	10.2	65	Calm	.....	.....	0	4cs	0	.....	.....	0	0	Fair	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.44	620.8	30.02	762.7	54.5	12.5	81	W	.....	.....	3	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.13	587.5	30.16	766.1	51.8	11.0	81	Calm	0	0	.....	4ck	0	.....	.....	0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	55.2	12.9	53	N	.....	.....	2	1c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E
Puebla	23.37	593.5	30.02	762.4	55.2	12.9	75	NE	2.1	0.9	.....	4ck	4ns	E	.....	0	0	Cloudy	Prof. B. Gonzalez.
Tlacotalpam	29.98	761.4	29.99	761.7	73	22.8	78	NW	.....	.....	1	4ck	6n	N	N	0.28	7.	Rainy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.23	767.8	51.0	10.6	57	E	3.1	0.4	.....	2	0	W	.....	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	30.02	762.6	30.05	763.4	77.9	25.5	71	NW	1.8	0.8	.....	.....	9ks	.....	.....	0	0	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	51.8	11.0	84	NNE	.....	.....	3	0	4	.....	E	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.0	54.7	12.6	82	NNE	2.7	1.2	.....	0	8	.....	Calm	0	0	Almost cov'd	Prof. P. Spina, [M.M.D.D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.34	719.7	29.95	760.7	79.3	26.3	87	E	0.8	0.4	.....	0	6	.....	E	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.90	759.4	29.90	759.4	66.9	19.4	.....	SW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.80	757.0	29.86	758.4	64.2	17.9	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Helder	29.81	757.1	29.81	757.1	64.8	18.2	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.173	4.4	.....	
Hellevoetsluis	29.86	758.5	29.86	758.5	67.5	19.7	81	SSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.84	758.0	29.89	759.2	65.8	18.8	67	SSW	.....	.....	4	.....	2	.....	.....	0	0	Slightly cl'dy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.28	743.6	29.33	745.0	57.6	14.2	90	S	34.7	15.5	.....	.....	8	.....	.....	0.984	25.0	Light rain...	
Brönö	29.48	748.8	29.52	749.8	51.4	10.8	68	E	18	8	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.56	750.8	29.70	754.4	58.1	14.5	70	S	16	7	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.33	745.0	29.37	746.1	43.2	6.2	79	SSW	20	9	.....	.....	10	.....	.....	0.059	1.5	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.00	762.0	30.19	766.7	73.0	22.8	90	SSE	2.5	1.1	.....	.....	8	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.05	737.9	30.03	762.7	82.9	28.3	32	WNW	9.8	4.4	.....	.....	4	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.11	764.7	30.11	764.9	77.0	25.0	67	SW	5.6	2.5	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.74	755.4	30.09	764.2	75.4	24.1	52	N	15.0	6.7	.....	.....	3	NNW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.16	766.1	30.23	767.8	78.8	26.0	76	SE	2.5	1.1	.....	.....	6	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 40° 27′, W. 17° 41′	.....	.....	30.23	767.7	73.4	23	.....	W	.....	.....	2	.....	2	.....	WNW	2	.....	D. Clouds ...	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 15° 03′, E. 12° 02′	.....	.....	29.97	761.2	76.8	24.5	.....	WSW	.....	.....	3	.....	3	.....	WSW	2	WSW	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.95	760.6	81.5	27.5	.....	SE	.....	.....	2	.....	3	.....	SE	3	SE	D. Clouds ...	L. Ribeiro de Costa, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 09′	.....	.....	29.93	760.2	78.4	25.8	.....	NNW	.....	.....	1	.....	2	.....	.....	1	.....	Blue sky	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.76	756.0	81.5	27.5	.....	NNE	.....	.....	3	.....	5	.....	NNE	1	.....	D. clouds.....	M T. Guimaraes, Com'd't.

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.60	751.9	30.00	762.1	75.9	24.4	46	SSW	2	1	.....	.....	1c	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.63	752.7	30.04	763.0	68.4	20.2	50	W	2	1	.....	.....	2	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.71	754.7	29.95	760.6	67.6	19.8	59	W	7	3	.....	.....	6k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.85	758.2	29.87	758.6	62.1	16.7	79	W	13	6	.....	.....	3ks	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.37	746.0	29.97	761.3	75.2	24.0	43	NNW	9	4	.....	.....	9k;ks;c;	ck	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.97	761 3	30.04	763.1	80.2	26.8	58	NW	4	2	.....	.....	3k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.04	762.9	30.06	763.4	76.3	24.6	55	NNE	7	3	.....	.....	1	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.44	747.7	29.97	761.2	65.3	18.5	63	S	11	5	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.83	757.6	30.02	762.6	73.6	23.1	32	Calm	0	0	.....	.....	1	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	29.53	750.1	29.55	750.6	52.0	11.1	78	NW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.58	726.0	29.95	760.6	75.6	24.2	39	E	4	2	.....	.....	2ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.12	765.1	30.04	763.0	65.3	18.5	38	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.39	746.5	29.85	758.2	55.9	13.3	63	NNW	7	3	.....	.....	6k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.61	752.0	29.87	758.8	56.1	13.4	78	NNW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.71	729.3	29.64	752.8	55.0	12.8	71	N	4	2	.....	.....	4cks	.....	.....	.....	.....	.....	Meteorological Obs
Nukuss	29.70	754.4	29.93	760.1	74.7	23.7	42	WSW	11	5	.....	.....	2k	.....	.....	.....	.....	.....	
Tashkend	28.43	722.0	30.10	764.4	66.9	19.4	75	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.35	745.6	29.86	758.5	56.3	13.5	70	SW	4	2	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.45	747.9	29.73	755.2	51.4	10.8	89	N	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.82	757.4	29.96	761.0	71.6	22.0	85	Calm	0	0	.....	.....	6ks	.....	.....	Blank	Blank	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.86	758.4	29.96	761.0	78.8	26	66	SE	1.1	0.50	.....	2c	5k	W	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.01	762.2	30.07	763.6	77.7	25.4	59	NW	2.6	1.18	.....	4	2	N	.....	0	0	Cloudy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.14	689.4	.....	.....	80.2	26.8	46	N	3.4	1.53	.....	.....	.....	.....	.....	0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.83	706.9	29.91	759.7	91.0	32.8	24	SW	8.9	4.00	.....	7	0	W	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.83	757.7	29.97	761.3	91.4	33.0	47	NE	2.4	1.08	.....	1	4	W	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.20	741.6	30.08	764.0	70.3	21.3	83	NNW	6.3	2.83	.....	.....	7	.....	.....	0	0	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.89	759.3	29.96	760.9	78.0	25.6	87	Calm	0	0	.....	1ck;cs	1k	.....	.....	0.083	2.1	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.4	30.03	762.8	83.7	28.7	53	WNW	11.9	5.3	.....	2	4	NW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.79	756.6	29.88	758.9	83.8	28.8	84	NE	11.8	5.26	.....	2c	4k	NE	NE	0.030	0.75	D. clouds....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.59	751.6	29.63	752.6	52.5	11.4	.....	W	.....	.....	6	.....	0	.....	.....	0	0	.....	
Umea	29.70	754.4	29.75	755.7	55.0	12.8	53	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	29.72	755.0	29.78	756.3	56.8	13.8	53	S	.....	.....	6	.....	2	.....	.....	0	0	.....	
Stockholm	29.70	754.4	29.88	758.9	61.9	16.6	85	S	.....	.....	4	.....	2	.....	.....	0	0	.....	
Wisby	29.83	757.7	29.89	759.2	62.2	16.8	66	WNW	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.76	756.0	29 84	757.9	62.6	17.0	57	SSW	12.3	5.5	.....	.....	3	WSW	.....	0.098	2.48	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.60	726.5	30.00	761.9	64.9	18.3	60	N	.....	.....	1	.....	4?	.....	.....	0	0	Cloudy ?	The Observatory.
Zurich	28.41	721.7	30.03	762.7	61.5	16.4	77	N	.....	.....	2	.....	9	.....	.....	0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.6 mm.; Thermometer, +0.1 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.98	761.5	72.1	22.3	73	ENE	14	6.5	.....	.....	10	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.09	764.3	81.1	27.3	.....	SW	.....	.....	2	.....	2	.....	.....	0.35	9.	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.90	759.4	89.6	32.0	58	W	.....	.....	3	.....	3c	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.87	758.7	30.18	766.6	53	11.7	.....	W	1	0.4	.....	.....	10s	.....	W	0.02	0.5	Cloudy	W. R. Bigg.
*Chatham, N. B	29.65	753.1	29.71	754.6	57	13.9	72	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	29.71	754.6	29.75	755.6	61	16.1	72	SW	10	4.5	.....	2ck	0	SW	.....	0.015	0.38	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.93	760.2	30.12	765.0	52.3	11.3	77	W	.....	.....	3	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.56	750.8	29.72	754.9	53.7	12.1	77	W	.....	.....	3	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	29.94	760.5	29.99	761.7	44.3	6.8	92	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.71	754.6	29.73	755.1	52	11.1	76	SW	32	14.3	.....	2k	8s	NW	W	Inap.	Inap.	Cloudy	J. McWilliams.
Fredericton, N. B	29.77	756.1	29.83	757.7	58.0	14.4	62	NW	13	5.8	.....	0	5s	.....	NW	0	0	Fair	Prof. Harrison.
*Fort Garry Manitoba	29.17	740.9	29.99	761.7	50	10.0	100	N	4	1.8	.....	5k	5n	N	N	0.200	5.08	Cloudy	James Stewart.
Granton, Ontario	29.16	740.7	30.28	769.1	47	8.3	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.68	753.9	29.81	757.2	62	16.7	79	W	8	3.6	.....	2ck	0	W	.....	0.010	0.25	Fair	F. Allison, M. A.
Hamilton, Ontario	29.93	760.2	30.30	769.6	55.5	13.1	79	W	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.69	754.1	29.72	754.9	62	16.7	94	SW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.87	758.7	30.20	767.1	54	12.2	70	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.68	753.9	29.72	754.9	70.2	21.2	55	NW	10	4.5	.....	3c	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.89	759.2	30.08	764.0	53	11.7	70	W	15	6.7	.....	0	2ck	.....	.....	0.02	0.5	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.57	751.1	30.27	768.8	47	8.3	92	N	7	3.1	.....	0	0	.....	.....	0.22	5.6	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.21	767.3	51.7	10.9	89	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.58	751.3	30.28	769.1	49	9.4	93	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.62	752.3	30.27	768.8	50	10.0	94	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.62	752.3	29.93	760.2	52	11.1	73	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.77	756.1	30.23	767.8	46	7.8	88	NW	6	2.7	.....	0	2s	.....	.....	0.01	0.3	Clear	W. H. McIntyre.
St. Andrews, N. B	29.80	756.9	29.85	758.2	58	14.4	66	NW	2	0.9	.....	0	0	.....	N	0.06	1.5	Fair	Dr. Gove.
St. John, N. B	29.69	754.1	29.85	758.2	57	13.9	81	N	11	4.9	.....	6ks	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.55	750.6	30.27	768.8	48	8.9	93	Calm	0	0	.....	2cs	Haze	.....	.....	0	0	Clearing	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Hazy	R. J. Cole.
Stratford, Ontario	28.98	736.1	30.28	769.1	43	6.1	98	Calm	0	0	.....	0	0	Calm	.....	Inap.	Inap.	.....	C. J. MacGregor, M. A.
*Sydney, C. B	29.73	755.1	29.75	755.6	67	19.4	75	SW	7	3.1	.....	2ck	2s	SW	SW	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.89	759 2	30.28	769.1	51	10.6	75	NW	7	3.1	.....	0	0	.....	.....	0.03	0.8	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap	Inap.	Clear	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	67.0	19.4	80	S	.....	.....	.....	Sm'e	Sm'e	.....	.....	0.05	1.3	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

Brockville – D-9

Cornwall – C-11

Granton —

Hamilton — F-5

Kingston — E-9

Peterboro — D-7

Port Dover — G-4

Port Stanley — F-3

Rockcliffe — —

Sarnia

Sault Ste Marie — D-4

Stratford — F-3

Toronto —

Parry Sound

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.88	758.9	30.11	764.8	55	12.8	68	NW	6	2.7	.....	5ck	0	NW	.....	0	0	Fair	
Alpena, Michigan	29.62	752.3	30.28	769.1	49	9.4	85	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.15	765.8	30.17	766.3	58	14.4	76	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.05	763.3	30.21	767.3	63	17.2	72	NE	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Baltimore, Maryland	30.17	766.3	30.22	767.6	60	15.6	65	W	5	2.2	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.14	765.5	30.17	766.3	61	16.1	71	NW	10	4.5	.....	0	Haze	.....	Calm	0	0	Clear	
Bismarck, Dakota	28.28	718.3	30.14	765.5	44	6.7	84	NW	13	5.8	.....	.....	10s	.....	N	0	0	Cloudy	
Boerne, Texas	28.61	726.7	.....	.....	62	16.7	71	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.09	688.1	30.05	763.3	39	3.9	55	SW	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Dense smoke	
Boston, Massachusetts	29.89	759.2	30.04	763.0	57.5	14.2	58	NW	15	6.7	.....	1k	0	NW	.....	0	0	Clear	
Brackettville, Texas	29.02	737.1	30.04	763.0	66	18.9	74	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.90	734.0	29.88	758.9	51	10.6	100	S	7	3.1	.....	5k	Fog	Calm	Calm	0	0	Cloudy	
Brownsville, Texas	30.04	763.0	30.11	764.8	66	18.9	90	Calm	0	0	.....	0	5ks	.....	Calm	0	0	Fair	
Buffalo, New York	29.55	750.6	30.26	768.6	56	13.3	69	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.87	758.7	30.13	765.3	54	12.2	67	NW	8	3.6	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Cairo, Illinois	29.84	757.9	30.23	767.8	59	15.0	82	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	53	11.7	60	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	64	17.8	39	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.75	679.4	30.24	768.1	59	15.0	48	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.42	696.5	29.99	761.7	45	7.2	67	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	71	21.7	53	NE	20	8.9	.....	2k	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.16	766.1	30.18	766.6	68	20.0	60	N	23	10.3	.....	5cs	0	W	.....	0	0	Fair	
Cape Lookout, N. Carolina	30.16	766.1	30.17	766.3	72	22.2	62	NE	20	8.9	.....	2c	0	W	.....	0	0	Fair	
Cape May, New Jersey	30.19	768.8	30.22	767.6	66	18.9	63	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.38	746.2	30.08	764.0	60	15.6	88	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.15	765.8	30.21	767.3	69	20.6	56	NE	15	6.7	.....	5cs	0	SW	.....	0	0	Fair	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	38	3.3	81	NW	4	1.8	.....	2ck	0	NW	.....	0	0	Clear	
Chicago, Illinois	29.54	750.3	30.24	768.1	57	13.9	58	S	7	3.1	.....	2c	0	Calm	.....	0	0	Clear	
Cincinnati, Ohio	29.65	753.1	30.31	769.9	51	10.6	93	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.57	751.1	30.30	769.6	53	11.7	80	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.35	720.1	30.04	762.5	55	12.8	81	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.47	748.5	30.32	770.1	48	8.9	77	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Concho, Texas	28.23	717.0	29.92	760.0	54	12.2	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.72	754.9	30.19	766.8	59	15.0	70	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.53	750.0	30.17	766.3	57	13.9	75	SE	4	1.8	.....	Haze	0	Calm	.....	0	0	Clear	
Decatur, Texas	28.92	734.6	30.08	764.0	61	16.1	67	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.37	746.0	30.16	766.1	62	16.7	77	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.85	631.2	30.07	763.8	46	7.8	54	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.03	762.7	60	15.6	71	SE	3	1.3	.....	0	Haze	.....	Calm	0	0	Hazy	
Detroit, Michigan	29.62	752.3	30.30	769.6	50	10.0	86	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.38	695.4	29.59	751.6	62	16.7	56	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.44	747.8	30.14	765.5	56	13.3	75	SE	6	2.7	.....	0	Fog	.....	S	0	0	Foggy	
Duluth, Minnesota	29.35	745.5	30.01	762.2	58	14.4	70	SW	3	1.3	.....	5k	2s	SW	W	0	0	Cloudy	
Eagle Pass, Texas	29.41	747.0	30.15	765.8	61	16.1	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.78	756.4	29.84	757.9	60	15.6	77	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	64	17.8	83	Calm	.....	.....	0	2c	2s	Calm	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	75	23.9	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.55	750.6	30.27	768.8	56	13.3	81	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.56	750.8	30.22	767.6	48	8.9	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.40	721.3	30.00	762.0	70	21.1	53	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.58	649.7	29.64	752.8	51	10.6	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	60	15.6	53	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.62	752.3	30.15	765.8	64	17.8	78	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.86	733.0	30.13	765.3	54	12.2	80	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Fort McKavett, Texas	27.92	709.2	29.80	756.9	66	18.9	69	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.91	734.3	30.02	762.5	56	13.3	81	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.41	721.6	29.66	753.4	65	18.3	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.11	764.8	30.15	765.8	70	21.1	80	N	8	3.6	.....	0	.....	.....	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.61	752.1	30.25	769.1	45.5	7.5	88	SE	3	1.3	.....	0	Fog	.....	Calm	0	0	Foggy	
Indianapolis, Indiana	29.52	749.8	30.32	770.1	48	8.9	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.12	765.0	30.15	765.8	70	21.1	80	NE	13	5.8	.....	1k	0	E	.....	0	0	Clear	
Jacksboro, Texas	29.01	736.8	30.13	765.3	60	15.6	65	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.08	764.0	30.11	764.8	75	23.9	77	N	7	3.1	.....	5k	0	NE	.....	0	0	Fair	
Keokuk, Iowa	29.50	749.3	30.11	764.8	61	16.1	71	S	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Key West, Florida	29.93	760.2	29.96	761.0	83	23.3	79	E	5	2.2	.....	1cs	1ks	Calm	Calm	0.02	0.5	Clear	
Kittyhawk, North Carolina	30.18	766.6	30.20	767.1	71	21.7	53	NE	28	12.5	.....	2k	0	W	.....	0	0	Fair	
Knoxville, Tennessee	29.30	744.2	30.32	770.1	53	11.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.36	745.7	30.09	761.3	55	12.8	74	S	6	2.7	.....	2k	0	S	.....	0	0	Clear	
La Mesilla, New Mexico	26.12	663.4	30.27	768.8	52	11.1	66	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.68	753.9	30.02	762.5	60	15.6	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.90	632.4	30.17	766.3	34	1.1	100	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Leavenworth, Kansas	29.21	741.9	30.04	763.0	60	15.6	82	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.55	750.6	29.88	758.9	60	15.6	71	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.74	755.4	30.31	769.9	53	11.7	73	N	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.58	751.3	30.26	768.6	61	16.1	70	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.47	748.5	30.16	766.1	58	14.4	70	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.50	723.9	30.27	768.8	54	12.2	86	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.94	760.5	30.26	768.6	60	15.6	70	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.52	749.8	30.25	768.3	55	12.8	68	SW	8	3.6	.....	1c	0	Calm	.....	0	0	Clear	
Mobile, Alabama	30.13	765.3	30.17	766.3	63	17.2	78	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.96	761.0	30.20	767.1	60	15.6	70	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.24	742.7	30.31	769.9	51	10.6	86	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Mt. Washington, N. H.	23.68	601.5	30.04	763.0	30	−1.1	100	NW	72	32.2	.....	.....	Fog	.....	NW	0.25	6.3	Foggy	
Nashville, Tennessee	29.77	756.1	30.31	769.9	53	11.7	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
New Haven, Connecticut	30.00	762.0	30.12	765.0	60	15.6	71	NW	2	0.9	.....	2k	0	W	.....	0	0	Clear	
New London, Connecticut	30.05	763.3	30.10	764.5	62	16.7	61	W	16	4.5	.....	0	1s	.....	W	0	0	Clear	
New Orleans, Louisiana	30.08	764.0	30.14	765.5	70	21.1	57	N	10	4.5	.....	Haze	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	30.03	763.3	30.08	764.0	60	15.6	60	W	17	7.6	.....	0	0	.....	.....	0	0	Clear	
New York, New York	29.98	761.5	30.16	766.1	60	15.6	65	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Norfolk, Virginia	30.18	766.6	30.24	768.1	67	19.4	69	N	7	3.1	.....	2cs	1s	Calm	N	0	0	Fair	
North Platte, Nebraska	27.10	688.3	29.67	753.6	47	8.3	85	N	10	4.5	.....	5k	0	NW	.....	0	0	Fair	
Olympia, Washington Ter.	29.99	761.7	30.03	762.7	38	3.3	100	E	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.87	733.3	29.92	760.0	58	14.4	88	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.91	759.7	30.23	767.8	55	12.8	74	NW	12	5.4	.....	5k	0	NW	.....	0	0	Fair	
Pembina, Dakota	29.13	739.9	29.95	760.7	50	10.0	100	NW	12	5.4	.....	.....	10s	.....	NW	0.13	3.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer, corrected for instrum'tal error and temperature: Inches.	Millimeters.	Reduced to sea-level: Inches.	Millimeters.	Temperature of the air: Fahrenheit.	Centigrade.	Relative humidity: Per cent.	Wind direction: From—	Velocity: Miles per hour.	Meters per second.	Force: 0—10.	Clouds amount, Up'er: 0—10	Low'r: 0—10.	Clouds direction, Upper: From—	Lower: From—	Rain-fall or melted snow in the past 24 hours: Inches.	Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.13	765.3	30.18	766.6	60	15.6	71	NW	4	1.8	....	0	Haze	....	Calm	0	0	Clear	
Phœnix, Arizona	28.72	729.5	....	....	74	23.3	40	E	....	....	2	0	0	....	....	0	0	Clear	
Pike's Peak, Colorado	17.93	454.7	30.14	765.5	28	—2.2	51	SW	18	8.0	....	0	0	....	....	0	0	Clear	
Pioche, Nevada	23.99	609.3	29.76	755.9	55	12.8	33	S	8	3.6	....	0	0	....	....	0	0	Clear	
Pittsburg, Pennsylvania	29.46	748.3	30.29	769.4	51	10.6	86	Calm	0	0	....	0	0	....	....	0	0	Clear	
Port Huron, Michigan	29.60	751.8	30.27	768.8	53	11.7	80	W	4	1.8	....	0	0	....	....	0	0	Clear	
Portland, Maine	29.92	760.0	29.96	761.0	58	14.4	64	W	7	3.1	....	1k	0	Calm	....	0	0	Clear	
Portland, Oregon	29.96	761.0	30.06	763.5	48	8.9	100	S	1	0.4	....	....	Fog	....	Calm	0	0	Foggy	
Prescott, Arizona	24.81	630.2	30.17	766.3	48	8.9	43	SW	5	2.2	....	0	0	....	....	0	0	Clear	
Pilot Point, Texas	29.40	746.7	30.22	767.6	62	16.7	77	SE	7	3.1	....	0	Sm'e	....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.00	762.0	30.02	762.5	80	26.7	87	NE	8	3.6	....	5ck	0	SW	....	0.34	8.6	Fair	
Red Bluff, California	29.54	750.3	29.90	759.4	55	12.8	62	E	3	1.3	....	0	Haze	....	Calm	0	0	Clear	
Rio Grande City, Texas	29.95	760.7	30.16	766.1	64	17.8	48	SW	4	1.8	....	1cs	0	Calm	....	0	0	Clear	
Rochester, New York	29.62	752.3	30.24	768.1	54	12.2	74	W	5	2.2	....	0	0	....	....	0	0	Clear.	
Roseburg, Oregon	29.46	748.3	30.03	762.7	42	5.6	94	Calm	0	0	....	....	10s;sm'	....	Calm	0	0	Cloudy	
Sacramento, California	29.82	757.4	29.90	759.4	54	12.2	80	S	8	3.6	....	0	Sm'e	....	Calm	0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.23	767.8	60	15.6	77	S	10	4.5	....	0	0	....	....	0	0	Clear	
St. Marks, Florida	30.09	764.3	30.11	764.8	72	22.2	76	N	12	5.4	....	2ck	0	E	....	0	0	Fair	
St. Paul, Minnesota	29.14	740.1	29.95	760.7	57	13.9	69	SE	6	2.7	....	....	10s	....	Calm	0	0	Cloudy	
Salt Lake City, Utah	25.48	647.2	29.81	757.2	58.0	14.4	42	W	3	1.3	....	2k	2ks	W	W	0	0	Fair.	
San Antonio, Texas	29.47	748.5	30.06	763.5	58	14.4	94	Calm	0	0	....	0	0	....	....	0	0	Clear	
San Diego, California	29.84	757.9	29.91	759.7	61	16.1	58	Calm	0	0	....	0	0	....	....	0	0	Clear	
Sandusky, Ohio	29.62	752.3	30.30	769.6	53	11.7	86	W	7	3.1	....	0	0	....	....	0	0	Clear	
Sandy Hook, New Jersey	30.12	765.0	30.16	766.1	65	18.3	58	W	17	7.6	....	0	0	....	....	0	0	Clear	
San Francisco, California	29.89	759.2	29.95	760.7	56	13.3	81	SW	4	1.8	....	....	10s	....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	49	9.4	37	E	2	0.9	....	0	0	....	....	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.19	766.8	68	20.0	74	NE	6	2.7	....	1cs	0	Calm	....	0	0	Clear	
Shreveport, Louisiana	29.99	761.7	30.21	767.3	61	16.1	82	Calm	0	0	....	0	0	....	....	0	0	Clear	
Silver City, New Mexico	24.39	619.5	....	....	50	10.0	64	N	2	0.9	....	0	0	....	....	0	0	Clear	
Smithville, North Carolina	30.17	766.3	30.21	767.3	69	20.6	80	N	8	3.6	....	0	8s	....	SW	0	0	Cloudy	
Springfield, Massachusetts	29.97	761.2	30.10	764.5	60	15.6	55	NW	9	4.0	....	2k	0	NW	....	0	0	Fair	
Stockton, Texas	27.04	686.8	30.04	763.0	59	15.0	48	S	20	8.9	....	0	0	....	....	0	0	Clear.	
Thatcher's Island, Mass	29.97	761.2	30.02	762.5	57	13.9	64	NW	19	8.5	....	0	0	....	....	0	0	Clear.	
Toledo, Ohio	29.61	752.1	30.30	769.6	53	11.7	80	S	3	1.3	....	0	Haze	....	Calm	0	0	Hazy	
Tucson, Arizona	27.22	691.4	29.77	756.1	70	21.1	52	S	4	1.8	....	0	0	....	....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.18	766.6	72	22.2	71	NE	23	10.3	....	0	0	....	....	0	0	Clear	
Umatilla, Oregon	29.64	752.8	....	....	42	5.6	66	SE	8	3.6	....	5ck	Sm'e	Calm	Calm	0	0	Smoky	
Unalashka, Aleutian Islands	....	....	....	....	45	7.2	100	NW	....	....	4	....	10 [illegible]	....	W	0.07	1.8	Cloudy	
Uvalde, Texas	29.24	742.7	30.05	763.3	59	15.0	82	SE	1	0.4	....	0	0	....	....	0	0	Clear.	
Vicksburg, Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Virginia City, Montana	24.28	616.7	29.76	755.9	35	1.7	80	SE	4	1.8	....	....	10s	....	Calm	0	0	Cloudy	
Visalia, California	29.57	751.1	29.93	760.2	61	16.1	60	W	2	0.9	....	5k	0	W	....	0	0	Fair	
Washington, D. C	30.14	765.5	30.25	768.3	59	15.0	70	NW	9	4.0	....	0	0	....	....	0	0	Clear	
Wickenburg, Arizona	....	....	....	....	56	13.3	75	N	....	....	1	0	Haze	....	Calm	0	0	Hazy	
Wilmington, N. Carolina	30.11	764.8	30.19	766.8	67	19.4	73	NE	9	4.0	....	0	0	....	....	0	0	Clear	
Winnemucca, Nevada	25.57	649.5	29.93	760.2	46	7.8	33	SW	4	1.8	....	5k	2s	SW	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.00	762.0	30.05	763.3	60	15.6	59	NW	16	7.2	....	....	10s	....	....	0	0	Cloudy	
Yankton, Dakota	28.69	728.7	29.97	761.2	51	10.6	79	NW	11	4.9	....	2cs	0	SW	....	0	0	Fair	
Yuma, Arizona	29.67	753.6	29.83	757.7	71	21.7	67	SW	2	0.9	....	0	0	....	....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
York Factory, B. A	29.92	760.0	29.97	761.2	33.5	0.8	95	NW	12	5.4	....	2c	0	N	....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.94	760.5	29.96	761.0	82	27.8	83	SE	2.4	1.1	....	4c	0	Calm	....	0.13	3.3	Fair	Chas. Hasselbrink.
Santiago de Cnba, W. I	29.92	760.0	29.95	760.7	77	25.0	86	Calm	0	0	....	8c	0	....	....	Blank	Blank	....	Robert Mason.
St. Thomas	....	....	....	....	83	28.3	79	N	8	3.6	....	4c	8ks	E	....	0.14	3.6	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.09	764.3	30.10	764.5	79	26.1	95	Calm	0	0	....	5c	8n	Calm	E	0	0	....	James Gall.
Navassa, W. I	29.83	757.7	29.91	759.7	80	26.7	....	SE	7.5	3.4	....	....	....	....	....	Blank	Blank	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	85	29.4	72	SE	....	....	1	0	5k	....	....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.22	640.6	....	....	67.5	19.7	83	Calm	0	0	....	3ck	3ks	....	....	0.02	0.5	....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.? (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, [illegible]; Cheyenne, 6,057.5 ft., or 1,846.3 m.; Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,750 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.5 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.25	768.3	69	20.6	69	20.6	82	N	6	2.7	.....	.....	2	.....	E	0	0	.....	.....	Fair.....	
Navy Yard, Portsmouth, N.H.	30.02‡	762.5‡	.....	.....	57	13.9	94	NNW	9	4.0	.....	.....	2	.....	.....	0	0	.....	.....	Clear.	
Naval Hospital, Yokohama, Japan.....	29.80*	756.9*	76.5	24.6	73.4	23.0	95	SW	.....	.....	6	.....	10n	.....	S	5.50	139.7	.....	.....	Heavy rain..	
Adams. S. 45° 40', W. 155° 29'.....	30.34	770.6	55	12.8	49	9.4	93	NNW	.....	.....	5–6	.....	10	.....	SW	Blank	Blank	Long	NW	Cloudy.....	
Alliance, Villafranca, France	29.92‡	760.0‡	.....	.....	74	23.3	60	SSE	.....	.....	1–2	.....	1	.....	SSE	.....	.....	Light	S	Hazy.....	
Ashuelot. Yokohama, Japan	29.85	758.2	78	25.6	78	25.6	86	S	....	.....	6	.....	10	.....	N	.....	.....	Mod'ate	S	Raining.....	
Alaska. S. 43° 40', W. 77° 51'.....	29.48	748.8	53	11.7	49	9.4	93	WNW	.....	.....	5	.....	2	.....	SE	0.43	10.9	Rough	NW	Squally.....	
Canonicus, New Orleans, La.....	30.12	765.0	56	13.3	80	26.7	87	NE	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	Clear	
Colorado. New York, N. Y.....	30.17‡	766.3‡	.....	.....	62	16.7	61	WNW	10	4.5	.....	.....	2	.....	NW	0	0	.....	.....	Hazy..	
Constitution, Havre, France.....	29.90‡	759.4‡	.....	.....	64	17.8	94	SSW	.....	.....	4	.....	2	.....	SSW	.....	.....	.....	.....	Clear.....	
Despatch. Volo, Turkey.....	29.98‡	761.5‡	.....	.....	76	24.4	73	SE	.....	.....	3	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin. Norfolk, Va.....	30.29	769.4	70	21.1	68	20.0	70	N	8.4	3.8	.....	.....	2	.....	NNE	0	0	.....	.....	Clear.....	
Gettysburg Villafranca, France.....	29.83‡	757.7‡	.....	.....	78	25.6	91	S	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Guard. Bahia, Brazil.....	30.12	765.0	78	25.6	78	25.6	78	N	....	.....	1	.....	5	.....	E	.....	.....	.....	.....	Fair.....	
Hartford. Rio de Janeiro, Brazil ...	29.99	761.7	.....	.....	73	22.8	81	NW	4.8	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Marion. Naples, Italy.....	30.00	762.0	75	23.9	76	24.4	82	SSW	.....	.....	1	.....	0	.....	.....	Mod'ate	Mod'ate	.....	.....	Clear.....	
Michigan. Erie, Pa.....	30.07†	763.8†	.....	.....	57	13.9	81	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy. Ura-no-go-ura, Japan.....	29.76‡	755.9‡	.....	.....	76	24.4	82	SW	.....	.....	3–6	.....	10	.....	SW	.....	.....	.....	.....	Raining.....	
New Hampshire, Port Royal, S. C.....	30.34†	770.6†	.....	.....	73	22.8	67	NE	22	9.8	.....	.....	5	.....	NE	0	0	.....	.....	Fair.....	
Onward, Callao, Peru.....	30.08†	764.0†	.....	.....	64	17.8	89	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.36	771.1	60	15.6	60	15.6	100	NW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China.....	30.03	762.7	73	22.8	72	22.2	85	SSE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Fair.....	
Plymouth. New York, N. Y..... ...	30.21	767.3	63	17.2	61	16.1	77	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	29.92	760.0	83	28.3	82	27.8	75	E	.....	.....	3	.....	8	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas.....	30.04	763.0	68	20.0	68	20.0	95	N	.....	.....	2	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.21‡	767.3‡	.. ..	.....	62	16.7	61	W	.....	.....	2	.....	2	.....	NW	0	0	.....	.....	Clear	
Saratoga, League Island, Pa	30.00*	762.0*	.....	.....	57	13.9	69	WSW	.....	.....	3	.....	10?	.....	.....	.....	.....	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.08	764.0	65	18.3	61	16.1	66	W	5	2.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France.....	29.96	761.0	64	17.8	67	19.4	74	WSW	.....	.....	2	.....	5	.....	wsw	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass.....	30.00‡	762.0‡	.....	.....	60	15.6	60	NW	.....	.....	2	.....	5?	.....	NW	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England	29.79‡	756.7‡	.....	.....	66	18.9	68	WSW	.....	.....	4–6	.....	10	.....	W	1.0	25.	.....	.....	Squally.....	
Tuscarora, La Paz, Mexico.....	29.68	753.9	76	24.4	77	25.0	82	S	.....	.....	1	.....	0	.....	.....	0	0	....	.....	Clear.....	
Vandalia. Villafranca, France.....	29.92‡	760.0‡	.....	.....	75	23.9	68	SSW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.03‡	762.7‡	.....	.....	59	15.0	59	NW	11	4.9	.....	.....	2	.....	Calm	0	0	.....	.....	Fair.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co operation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S City of Peking, N. 36° 21′, E. 146° 47′		30.25†	768.3†	66	18.9	84	E	7	3.1		2		E		Small	E	D. clouds		Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, Seattle, W. T.		30.02†	762.5†	52	11.1	100	Calm			0		0			0			D. smoke	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 40° 50′ W. 66° 30′		30.06*	763.5*	66	18.9	??	WNW			2		2c		NW		Mod'ate	W	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic, N. 29° 13′, E. 129° 42′		29.53*	750.0*	82	27.8	91	ESE			5		n		SE		Rough	SSE	Showery	Capt. L. Myer.
S. S. Gaelic, N. 22° 40′, E. 116° 16′		29.77†	756.1†	79	26.1	95	NE			3		s		NE	0	Smooth		D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 11′, W. 25° 57′		29.91	759.7	68.0	20.0	5.6	WNW			6		7		WNW		6	NW		Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 40° 57′, W. 58° 20′		30.03*	762.7*	77	25.0	91	SW			3		2		SW	Slight	Mod'ate	SW	Hazy	Captain Sargent.
S. S. Ohio, N. 51° 28′, W. 28° 09′		29.82	757.4	52	11.1	86	WNW			6		7		WNW	Small	Heavy	WNW	Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 32° 16′, W. 67° 27′		30.01	762.2	81	27.2	74	S	2	0.9			2k			0	Short		Clear	Capt. James Jorgensen.
Schooner Florence, N. 59° 1′, W. 61° 24′		30.15*	765.8*	36.0	2.2		SE		2.6			10ks			0			Cloudy	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 16, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.08	764.1	70.7	21.5	85	NE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	30.13	765.3	82.4	28.1	75	NNW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Kesxuche.
Algiers	.....	.....	30.09	764.2	80.6	27.0	75	NE	.....	.....	2	.....	1	.....	.....	0	0	Very fair	Tourillere.
La Calle	.....	.....	30.11	764.9	84.6	29.2	64	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy	Foufrede.
Tunis	.....	.....	30.10	764.5	80.6	27.0	76	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.15	765.7	82.4	28.0	.....	WNW	.....	.....	3	.....	0	.....	.....	0	0	Clear	Gau.
Saida	.....	.....	30.12	765.0	87.1	30.6	25	NE	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.10	764 5	81.0	27.2	27	N	.....	.....	4	.....	1	.....	.....	0	0	Very fair	Watrin.
Geriville	.....	.....	30.15	765.9	82.0	27.8	44	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	Brugnlaux.
Laghouat	.....	.....	30.16	766.1	86.0	30.0	37	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.13	765.2	94.6	34.8	28	ESE	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Chauvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.30	744.2	29.82	757.5	75.6	24.2	67	SW	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. Ivan Stožir.
Cracow, I. R. Observatory	28.98	736.2	29.71	754 7	75.2	24.0	64	SSW	.....	.....	3	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	28.94	735.0	29.78	756.3	73.0	22.8	61	S	.....	.....	4	.....	5c;k	.....	.....	0.16	4.	.....	Julius Mikolik.
Gratz	28.63	727.3	29.84	757.8	69.6	20.9	79	SSE	.....	.....	3	.....	5	.....	.....	0.059	1.50	.....	Andreas Rospini.
Hermannstadt	28.47	723.2	29.89	759.2	73.6	23.1	50	S	.....	.....	5	.....	2	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremtmünster	28.52	724.4	29.81	757.2	68.4	20.2	57	WNW	.....	.....	4	.....	5	.....	.....	0.098	2.5	.....	Prof. C. Wagner
Lemberg	28.80	731.5	29.74	755.4	72.1	22.3	70	S	.....	.....	1	.....	5	.....	.....	0.748	19.0	.....	Dr. T. Stanecki.
Pola	29.80	757.0	29.91	759.8	72.0	22.7	78	SSW	.....	.....	1	.....	1ks	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.40	746.8	29.84	758.0	77.5	25.3	65	S	.....	.....	2	.....	4	.....	.....	0.315	8.0	.....	Julius Osics, S. J.
Szegedin	29.54	750.3	29.81	757.1	76.1	24.5	69	Calm	.....	.....	0	.....	10	.....	.....	0.051	1.30	.....	Karl Stancsi.
Trieste	29.82	757.3	29.92	759.9	72.7	22.6	77	W	.....	.....	1	.....	6	.....	.....	0.209	5.3	Raining	P. Busin.
Vienna	29.11	739.4	29.80	756.8	74.7	23.7	41	W	.....	.....	2	.....	8	.....	.....	0.016	0.4	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Passau.
Brussels	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.14	740.1	29.23	742.4	58.3	14.6		W	33	14.8			3			0	0	Squally	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			29.80	756.9	53.9	12.2		W	13	5.8			7					Squally	S. Call.
Bidston, (Liverpool Obs.)			29.75	755.6	55.4	13.0		W	55	24.6			10					Squally	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.30	744.2	29.69	754.1	52.7	11.5		NW			6		6			0.57	14.5	Raining	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	86	30.0		SE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.81	757.2	60.0	15.6		WSW			4		7					D. clouds	H. Todd. [H. C.
Cardington			29.86	758.4	61.0	16.1		SW			5		6					D. clouds	John McLaren.
Chatham, School M. E.	29.74	755.4	29.87	758.7	60.2	15.7		S			4		5					Blue sky	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.44	722.4	29.90	759.4	56.0	13.3		W			5		7					Gloomy	Alexander Watt.
Donaghadee	29.71	754.6	29.73	755.1	55	12.8		WNW			7		0					Blue sky	J. Mac Gowan.
Dover	29.87	758.7	29.90	759.4	62	16.7		W			5		3					¼ clouded	J. Costello.
Eccles, (near Manchester)			29.74	755.4	55.2	12.9		WNW	11.4	5.1			5					Squally	Thomas Mackereth.
Falmouth, Observatory	29.87	758.7	30.10	764.5	61.0	16.1		WNW			5		3					D. clouds	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	80	26.7		Calm			0		3					D. clouds	
Galway, Queen's College			29.85	758.2	57	13.9		W			6		9					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.08	764.0				E			2		1					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.30	744.2	29.51	749.5	53.8	12.1		W			8		2					Squally	D. G. Maclean.
Great Yarmouth	29.70	754.4	29.71	754.6	58	14.4		WNW			5		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y.	29.70	754.4	29.87	758.7	60.7	15.9		WNW			5		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.86	758.4	30.07	763.8	62	16.7		WNW			6		3					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			30.18	766.6	65	18.3		SW			6		1ck			0.06	1.5	Fine	M. P. Moyle.
Holyhead	29.82	757.4	29.87	758.7	57	13.9		W			6		2					Blue sky	John Tilston.
Jersey	29.82	757.4	30.11	764.8	62.2	16.8		WNW			6		2			Blank	Blank	Squally	J. Fisher.
Kew, Observatory	29.86	758.4	29.89	759.2	60.8	16.0		WNW	21	9.4			8					D. clouds	The Staff.
Kingstown	29.85	758.2	29.88	758.9	56	13.3		W			7		4					D. clouds	George Mitchell.
Leicester, Museum			29.80	756.9	56.7	13.7		W			6		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.97	761.2	30.04	763.0	81	27.2		N			1		2c					D. clouds	Sergt. Beckett.
Nairn	29.19	741.4	29.27	743.4	54	12.2		SW			6		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.94	760.5	84.8	29.3		NE			1		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.60	751.8	29.78	756.4	55.7	13.2		WNW			6		10k;d		W	0.102	2.59	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.30	744.2	29.82	757.4	56.0	13.3		W			7		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.90	759.4	59	15.0		W			6		10					Threatening	H. E. Bellamy.
Plymouth	29.97	761.2	30.04	763.0	62.8	17.1		NW			5		7					D. clouds	John Merrifield.
Roche's Point	29.99	761.7	30.04	763.0	59	15.0		NW			5		5					Squally	W. Kennedy.
Saint Ann's Head	29.79	756.7	29.96	761.0	58	14.4		W			6		4					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			28.95	735.3	50.9	10.5		W	50	22.4			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.86	758.4	75.0	23.9		NE			1		4					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.50	749.3	29.78	756.4	55.9	13.3		W			7		8			0.01	0.3	Threatening	W. F. Cooper.
Silloth, Rectory	29.71	754.6	29.74	755.4	59.0	15.0	64	NW			6		2			0.070	1.78	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.33	745.0	29.74	755.4	53.2	11.8		W			6		7					Squally	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.67	753.6	29.59	759.2	61.3	16.3		W			2–3		5					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.06	738.1	51	10.6		W			7		9					Showery	John Trotter.
Truro, Royal Institution			30.11	764.8	64	17.8		NW			8		4					D. clouds	W. Newcombe.
Valencia, Observatory			30.08	764.0	60.0	15.6		W	28	12.5			9					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.97	761.2	50.0	10.0	82	S			2		7k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	30.02	762.5	30.22	767.5	71.0	21.7	79	ESE	17.0	7.6		0	10		SE	0.07	1.8	Squally	C. Meldrum.
Melbourne, Observatory	30.02	762.5	20.11	764.8	49.0	9.4	79	SSE	1	0.4			0			0.11	2.8	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Baro. corr. Inches	Millimeters	Reduced Inches	Millimeters	Fahrenheit	Centigrade	Per cent.	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0–9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 26° 20′, W. 29° 30′			30.20	767.1	82	27.8					4		4	WSW		0		D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 41° 5′, W 60° 40′			30.12	765.0	68	20.0		N			3		8			3	SSW	D. clouds	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			Mr. Ansart.
San José	26.22	666.0			67.6	19.8	98	SE			1	2cs				Inap.	Inap.		Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.26	743.3	29.31	744.5	53.8	12.1	79	WSW			2		10						
Fanöe	29.27	743.4	29.29	743.9	59.9	15.5	67	WSW			7		5					Raining	
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.68	728.5	28.72	729.4	48.7	9.3	79	WNW			6		5					Raining	
Vestervig	29.00	736.5	29.17	740.8	57.6	14.2	79	WSW			7		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.58	751.2	30.13	765.2	63.3	17.4	59	N			4		8		NW	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.99	761.8	30.07	763.8	80.6	27.0	38	N			1					0	0	Light clouds	M. Giraud, Director.
Bar-sur-Seine	29.49	749.1	30.04	763.0	64.6	18.1	53	W			3		8kn		W	0.087	2.2	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.73	755.1	30.01	762.2	62.1	16.7	55	WNW			4		5		WSW	0.008	0.20	Cloudy	Frere Eugene Marie, Director.
Besançon	29.17	741.0	30.05	763.2	64.9	18.3	75	SW			6		5		S	0	0	Cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.49	749.0	30.03	762.8	64.4	18	80	N			1		2k		NE	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.90	759.4	30.14	765.6	68.4	20.2	57	WNW			4		6		WNW	0.010	0.25		The Staff.
Carcassonne, Normal School	29.62	752.4	30.02	762.5	77.0	25	52	W			4		8	W	E	0	0	Very cloudy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.27	743.5	29.82	757.4	74.3	23.5	83	W			6		10	E	E	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.67	753.7	29.98	761.6	65.5	18.6	67	W			3		2	W	W	0.079	2.0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.77	730.7	30.08	764.0	70.9	21.6	54	W			1		8		W	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.15	740.4	30.02	762.4	61.5	16.4	58	W			3		5cn		W	0.091	2.3	Cloudy	Dr. Coulet, Director.
Commune de Gréasque*	28.98	736.0	30.12	765.0	77.0	25.0	27	NW			4		2	NW		0	0	¼ covered	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	30.03	762.8	30.24	768.1	67.3	19.6	76	N			3		5		N	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29 84	757.8	30.14	765.6	63.9	17.7	86	NW			4		2		N	0.16	4.	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.20	741.6	30.02	762.5	64.4	18	80	SW			1		5		SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.14	765.5	30.17	766.3	65.1	18.4	90	NW			2		10			0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.94	735.0	29 97	761.2	59.0	15	80	NW			1		8ck		SW	0	0	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.84	757.9	30.06	763.4	79.3	26.3	61	N			1		2c		NW	0	0		Boyer, Director.
Privas, Normal School	29.08	738.6	30.11	764.9	73.4	23	44	N			4		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.21	640.4			50.0	10.0	100	W			6		0			0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.19	766.8	30.22	767.6	71.6	22.0	69	WNW			3		10	WNW	WNW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.94	760.5	30.03	762.7	64.0	17.8	55	W			1		5		W	0.067	1.7	Cloudy	F. Lucard, Director.
Saint Malo (Port)			30.13	765.2	63.0	17.2	55	WNW			4		1		WSW	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.87	758.7	30.04	762.9	64.2	17.9	48	W			3		4		WNW	0.051	1.3		E. Renou.
Tarbes, Normal School	29.21	741.9	30.27	768.9	64.4	18	80	E			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.69	754.0	29.71	754.7	82.4	28										4.64	118.		L'Abbé Marchési.
Lyons			30.13	765.2	69.6	20.9	61						9			0	0		L. Jays.
Marseilles, Observatory			30.01	762.2	77.4	25.2	33	WNW			4–6		9			0	0	Very cloudy	The Staff.
Mont-Louis	25.01	635.2	30.32	770.2	68.7	20.4	35	SSE			2		1		SE	0	0		M. Cave.
Nice			29.95	760.6	74.5	23.6	70	SE			1		4			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.75	755.6	30.02	762.6	64.0	17.8	48	W			4		3		WNW	0.31	0.8		Marié Davy, Director
Perpignan			30.17	766.4	76.5	24.7	51	N	18.6	8.33			8		N	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.79	578.9			53.6	12.0		W			3		6			0	0	Fair	Gen'l de Nansouty
Toulouse, Observatory	29.54	750.3	30.27	768.8	73.0	22.8	49	W			4		9			0.059	1.50		The Staff.
Tours																0.039	1.0		C. Marquet.
Versailles			30.05	763.2	65.1	18.4	39	NW			3		3			0.51	1.30	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.91	759.8	29.94	760.4	69.8	21.0	92	N	4.7	2.1		3ck		W		0	0	Almost clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.93	734.8	29.76	756.0	58.1	14.5	76	W			3		8	W		0.08	2	Raining	Prof. Dr. Hoh.
Berlin	29.44	747.8	29.61	752.1	60.1	15.6	68	SW			5		8			0.110	2.8		Prof. Arndt.
Breslau	29.17	740.9	29.69	754.2	71.8	22.1	53	SW			3		9					Raining	Royal University Obs'y
Carlsruhe	29.47	748.5	29.89	759.3	58.6	14.8	88	SW			4		10			0.193	4.9	Raining	Albert Senz.
Cassel	29.12	739.7	29.67	754.0	64.0	17.8	40	W			4		5	W		0.234	5.94		Dr. H. Möhl.
Crefeld	29.57	751.0	29.73	755.1	62.2	16.8	50	W			6		6kn			0.08	2		Director Lose.
Emden	29.56	750.9	29.60	751.8	56.3	13.5	92	WNW			6		10			0.134	3.4	Thunder-storm	Prof. Prestel.
Frankfort on the Main	29.47	748.4	29.82	757.4	66.7	19.3		W			5		5			0.055	1.4		Physical Society.
Friedrichshafen	28.54	724.8	29.93	760.2	65.8	18.8	65	WNW			7		5	W		0.028	0.7	Raining	M. Wilhelm.
Hamburg	29.45	747.9	29.62	749.7	57.4	14.1	83	W			5		7kn			0.106	2.7	Squally	Captain F. Hegemann
Kiel	29.43	747.6	29.45	748.0	54.5	12.5	84	WSW			5		10			0.436	11.07		Prof. G. Karsten.
Königsberg, (Prussia)	29.41	746.9	29.48	748.9	71.6	22.0	60	S			6		6			0	0		Prof. E. Luther.
Köslin			29.43	747.4	58.6	14.8		SW			4		5			0	0		H. Müller.
Leipsic, Observatory	29.31	744.5	29.72	755.0	58.5	14.7	75	SW			3		9			0	0		Prof. Bruhns.
Memel, Naval School	29.44	747.8	29.49	749.0	71.8	22.1	62	S			5		7cs						Reinbrecht and Skalweit
Neufahrwasser	29.46	748.3	29.48	748.7	70.5	21.4	48	SSW			5		10			0	0		A. Lothes.
Posen	29.36	745.7	29.63	752.7	69.8	21.0	58	SW			6		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.43	748.5	29.97	761.2	61.5	16.4	66	W			4		9	SW		0	0		Astronomical Observatory.
Stuttgart	28.94	735.0	29.86	758.5	59.0	15.0	63	W			5		10			0.028	0.7	Light rain	Prof. Schoder.
Treves, (Trier)	29.34	745.3	29.56	758.6	63.7	17.6	45	W			7		3			0.111	2.82		Prof. Flesch.
Weissenburg, (Bavaria)	28.37	720.6	29.53	757.7	60.6	15.9	77	W	8.1	3.6			10		SW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.43	747.4	29.47	748.4	61.0	16.1	78	SW			6		4			0.181	4.6		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.8	29.93	760.3	81.1	27.3		NE			2.0							⅛ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.56	750.6	29.61	752.1	91.0	32.8	52	W	26?	11.6?		2				0	0	D. clouds	
Deesa	29.15	740.4	29.62	752.3	84.0	28.9	84	Calm				8	E	NE		0	0	D. clouds	
Bombay	29.65	753.0	29.68	754.0	80.1	26.7	91	W	13	5.8		10		W		0.51	13.0	Overcast	
Poona	27.67	702.9	29.67	753.5	77.0	25.0	74	SW				10		SW		0.47	11.9	Overcast	
Lahore	28.85	732.8	29.57	751.0	94.8	34.9	44	NW	0.9	0.4		0				0	0	Blue sky	
Belgaum	27.23	691.7	29.79	756.6	71.0	21.7	95	W	7	3.1		10		W		0.02	0.5	Showery	
Roorkee	28.70	729.0	29.57	751.2	89.8	32.1	65	Calm	1	0.4		0				0	0		
Agra	29.05	737.9	29.66	751.9	89.7	32.1	68	E								0	0		
Nagpur	28.51	724.1	29.55	750.5	77.6	25.3	93	SW	4.1	1.8		10		E		2.29	58.2	Gloomy	
Lucknow																			
Allahabad	29.24	742.8	29.55	750.5	85.4	29.7	81	ENE	4.2	1.9		1				0	0	D. clouds	
Patna	29.43	747.5	29.61	752.1	81.7	27.6	92	E	1.1	0.5		10	E	E				Drizzling	
Hazaribagh	27.60	701.1	29.60	751.5	78.0	25.6	89	ESE	13.3	5.9		10		SE		0.12	3.0	Thunder-storm	
Cuttack	29.50	749.4	29.59	751.5	84.0	28.9	79	SSW	1.2	0.5		7				0.15	3.8	D. clouds	
Calcutta (Alipore)	29.59	751.7	29.62	752.2	83.7	28.7	81	SSW	5	2.2		5				0	0	D. clouds	
Goalpara	29.25	742.8	29.63	752.6	84.4	29.1	79	SW	1.4	0.6		0				0	0	Blue sky	
Chittagong	29.59	751.6	29.68	753.9	83.1	28.4	91	SSW	2.7	1.2		2				0	0	Misty	
Sibsagar	29.30	744.1	29.62	752.4	86.9	30.5	72	ENE	1.2	0.5		8	W	W		0	0	D. clouds	
Jubbulpore	28.22	716.8	29.58	751.2	78.3	25.7	89	S	4.3	1.9		10				0.35	8.9	Raining	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.031 inch or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.52	749.9	29.92	760.0	70.7	21.5	76	E	0.7	0.3	.....	.....	9	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.78	756.5	29.89	759.2	73.8	23.2	62	NW	3.8	1.7	.....	.....	1	W	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.71	754.5	29.89	759.2	74 1	23 4	61	ESE	7.4	3.3	.....	.....	2	W	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.61	726.8	29.89	759.3	72.3	22.4	64	W	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.40	746.7	29.90	759.5	73.8	23.2	57	WNW	.....	.....	1	.....	4	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.00	736.5	29.87	758.8	72.7	22.6	56	NNW	2.5	1.1	.....	.....	6	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.05	712.4	29.90	759.5	72 0	22.2	57	W	.....	.....	4	.....	8	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.74	755.4	29.96	760 9	74.5	23.6	61	E	.....	.....	2	.....	9	E	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.80	756.9	29.97	761 1	75.6	24.2	60	SE	.....	.....	4	.....	8	NW	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.58	751.2	29.88	759.0	79.2	26.2	41	W	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.72	755 0	29.97	761.3	78.8	26.0	47	W	.....	.....	4	.....	5	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.89	759.2	29.97	761.2	76 3	24.6	59	W	6.3	2.8	.....	.....	5	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.87	758.8	29.92	760.0	75.2	24.0	63	E	.....	.....	.....	.....	2	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.43	722.0	29.94	760.4	70.2	21.2	60	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.82	757.4	29.99	761.7	79.9	26.6	49	W	6.9	3.1	.....	.....	5	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.81	757.2	30.00	762.1	76.8	24.9	54	NW	.....	.....	2	.....	5	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.71	754.7	29.96	760.9	75.2	24.0	70	ENE	1.8	0.8	.....	.....	4	SW	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.84	758.0	30.03	762.7	82.2	27.9	39	N	.....	.....	4	.....	3	NE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.15	740.5	30.01	762.3	73.4	23.0	74	SW	0.7	0.3	.....	.....	8	.....	.....	0.244	5.7	.....	Prof. F. D. Conti.
Palermo	29.79	756.7	30.04	763.0	79.3	26.3	48	WNW	11.9	5.3	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.91	759.8	29.99	761.7	79.5	26.4	69	E	3.8	1.7	.....	.....	4	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.47	748.6	30.03	762.7	73.6	23.1	66	SW	6.3	2.8	.....	.....	4	SW	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.57	751.1	29.77	756.1	75.8	24.3	77	NE	1.6	0.7	.....	.....	10n;s	.....	.....	0.480	12.19	Rainy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.85	758.2	29.92	759.9	73.3	22.9	98	SSW	10.7	4.8	.....	.....	10n	.....	.....	0.610	15.49	Light rain...	
Tokei (Yeddo) University	29.80	756.9	29.90	759.3	73.8	23.2	98	S	8	3.6	.....	.....	10n	.....	.....	2.54	64.52	.....	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.1	18.4	76	N	.....	.....	3	4c	0	E	.....	0.111	2.8	½ cloudy....	P. Ceballos.
Guadalajara	25.02	635.6	29.99	761.7	54 5	12.5	65	SW	.....	.....	1	0	1s	.....	.....	0	0	Clear.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.48	620.6	29.98	761.7	59.0	15.0	78	SW	.....	.....	1	0	0	.....	.....	0	0	Blue sky.....	Prof. M. Leal.
Mexico	23.12	587.2	30.26	768.6	55.0	12.8	85	N	2.2	1.0	.....	2k	2s	E	.....	0	0	Pleasant.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	56.5	13.6	75	NW	.....	.....	2	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	Prof. R. Gonzalez.
Tlacotalpam	29.91	759.8	29.92	760.1	74.5	23.6	88	NNW	.....	.....	5	0	10n	.....	N	0.009	2.5	Rainy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.14	765.6	56.0	13.3	25	E	3.1	0.4	.....	0	3	.....	E	0	0	Clear.....	G. Barroeta, M. D.
Vera-Cruz	29.96	760.8	29.99	761.5	78.8	26.0	69	NW	16.3	7.3	.....	.....	9ks	.....	.....	Inap.	Inap.	Threatening	Prof. J. Rosseli.
Zacatecas	.....	.....	.....	.....	54.5	12.5	79	NE	.....	.....	3	4	4	SW	NE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.3	30.04	763.0	51.8	11.0	85	NNE	2.7	1.2	.....	1	1	Calm	Calm	0.001	0.02	Almost clear	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.32	719.3	29.94	760.3	79.9	26.6	79	NE	1.9	0.8	.....	0	1	.....	.....	0	0	Clear.	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.80	757.0	29.80	757.0	62.6	17.0	.....	W	.....	.....	6	.....	.....	.....	.....	0.169	4.3	.....	
Groningen	29.51	749.6	29.57	751.0	56.7	13.7	.....	W	.....	.....	5	.....	.....	.....	.....	0.091	2.3	.....	
Helder	29.62	752.3	29.62	752.3	59.4	15.2	.....	W	.....	.....	6	.....	.....	.....	.....	0.122	3.1	.....	
Hellevoetsluis	29.72	755.0	29.72	755.0	57.4	14.1	76	W	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.68	753.9	29.73	755.1	58.3	14.6	68	W	.....	.....	5	.....	5	.....	.....	0.071	1.8	Cloudy.....	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	28.78	730.9	28.83	732.3	54.7	12.6	80	SSW	21.5	9.6	.....	.....	10	.....	.....	1.193	30.3	Raining.....	
Brönö	28.70	729.1	28.74	730.1	62.6	17.0	61	SSE	36	16	.....	.....	8	.....	.....	0.157	4.0	.....	
Christiania	28.83	732.3	28.97	735.9	58.5	14.7	74	WSW	13	6	.....	.....	10	.....	.....	1.071	27.2	.....	
Tromsö	29.00	736.7	29.05	737.8	47.8	8.8	55	N?	4	2	.....	.....	10	.....	.....	0.039	1.0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.19	766.7	30.37	771.4	73.2	22.9	93	ESE	1.8	0.8	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.18	741.2	30.14	765.6	69.6	32.0	19	NE	4.3	1.9	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.17	766.3	30.26	768.5	77.9	25.5	56	SW	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.85	758.3	30.20	767.1	80.1	26.7	35	NNE	19.9	8.9	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.34	770.7	30.41	772.4	78.1	25.6	74	SE	1.3	0.6	.....	.....	6	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando, N. 40° 09', W. 14° 57'	.....	.....	30.39	771.9	72.0	22.2	.....	N	.....	.....	5	.....	9	.....	N	5	.....	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 13° 42', E. 12° 8'	.....	.....	30.06	763.5	75.2	24.0	.....	W	.....	.....	2	.....	3	.....	W	1	.....	D. clouds.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	30.06	763.5	77.4	25.2	.....	WNW	.....	.....	3	.....	2	.....	WNW	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	30.02	762.4	86.0	30.0	.....	SE	.....	.....	2	.....	2	.....	Calm	2	SSE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.76	755.8	82.4	28.0	.....	ENE	.....	.....	2	.....	3	.....	ENE	0	.....	D. clouds.....	M. T. Guimaraes, Com'd't.

NOTE.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.62?	752.3?	30.02 ?	762.6?	74.3	23.5	55	SSW	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.31	744.5	29.71	754.7	70.7	21.5	59	SSE	9	4	.....	.....	3	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.46	748.2	29.69	754.1	71.1	21.7	60	SSE	9	4	.....	.....	8k;ks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.76	755.9	29.78	756.3	67.6	19.8	61	SSW	16	7	.....	.....	4cs	.....	.....	.....	.....	Light clouds	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.24	742.6	29.84	757.8	77.9	25.5	39	S	7	3	.....	.....	5k;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.90	759.4	29.97	761.2	82.0	27.8	40	SE	4	2	.....	.....	3cs	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.89	759.1	29.91	759.6	75.7	24.3	80	N	11	5	.....	.....	3	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.50	749.2	30.03	762.8	64.8	18.2	61	S	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.66	753.4	29.86	758.4	73.4	23.0	31	E	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.81	757.1	29.83	757.6	53.8	12.1	65	S	4	2	.....	.....	8k	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.65	727.7	30.02	762.6	72.3	22.4	59	SE	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.17	766.2	30.08	764.1	68.7	20.4	47	S	7	3	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.52	749.7	29.97	761.3	66.7	19.3	50	N	0	0	.....	.....	6k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.68	753.9	29.95	760.6	62.8	17.1	66	NNW	4	2	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.82	732.0	29.76	755.8	54.0	12.2	66	NW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.80	756.3	30.03	762.7	67.8	19.9	43	NNE	13	6	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	28.48	723.4	30.15	765.9	65.8	18.8	83	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.19	741.5	29.70	754.4	60.1	15.6	65	S	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.47	748.4	29.75	755.7	52.2	11.2	94	S	2	1	.....	.....	10	.....	.....	.....	.....	Raining.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.89	759.1	30.03	762.7	72.0	22.2	87	Calm	0	0	.....	.....	4cs	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.5 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nerichinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.01	762.2	30.11	764.8	81.1	27.3	52	E	2.6	1.17	.....	.....	2c	.....	.....	0	0	Clear.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.23	767.8	30.28	769.2	79.5	26.4	59	NW	1.9	0.86	.....	3	5	N	.....	0	0	Almost cov..	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.34	694.3	.....	.....	70.9	21.6	66	NE	4.2	1.94	.....	.....	.....	.....	.....	0	0	Clear.	Domingo Martin y Perez
Madrid, Royal Observatory	27.90	710.9	30.10	764.4	86.5	30.3	19	SW	4.5	2.00	.....	4	0	NE	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.97	761.2	30.11	764.8	91.4	33.0	47	NNE	3.0	1.33	.....	.....	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.39	742.5	30.19	766.9	68.5	20.3	79	NE	6.1	2.72	.....	.....	10	.....	.....	0	0	Covered.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	759.0	29.95	760.7	78.4	25.8	88	Calm	0	0	.....	0	1k	.....	.....	0.327	8.3	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.06	763.4	30.15	765.8	76.6	24.8	71	SW	6.5	2.9	.....	0	2	.....	SW	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.75	755.7	29.84	758.0	81.3	27.4	94	W	1.2	0.56	.....	3s	6k	Calm	Calm	0.197	5.00	Cloudy	Leonardo de Tejeda, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.37	746.0	29.41	747.0	51.4	10.8	.....	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.18	741.2	29.23	742.5	57.2	14 0	94	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Hernosand	29.04	737.7	29.10	739.0	58.1	14.5	93	SSE	.....	.....	7	.....	10	.....	.....	0	0	.....	
Stockholm	29.03	737.4	29.21	741.9	61.2	16.2	91	S	.....	.....	6	.....	10	.....	.....	0.012	0.3	.....	
Wisby	29.24	742.8	29.30	744.3	62.6	17.0	90	SW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.07	738.4	29.15	740.3	62.2	16.8	88	S	22.6	10.1	.....	.....	10	.....	SSW	0.319	8.10	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.71	729.1	30.10	764.5	66.0	18.9	63	WSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.39	721.2	30.00	761.9	64.8	18.2	64	W	.....	.....	6	.....	8	.....	W	0.008	0.2	Stormy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.1 mm.; Thermometer, +0.9 cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.93	760.2	73.9	23.3	58	NNW	9	4.0	.....	.....	7	.....	NW	0	0	.....	The Observatory.
Valona	.....	.....	30.05	763.2	79.7	26.5	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.74	755.4	29.85	758.3	91.4	33.0	50	W	.....	.....	3	.....	5k	.....	.....	0	0	D. clouds ...	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.21	767.3	30.28	769.1	52.0	11.1	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Hon. J. Ferguson.
Brockville, Ontario	29.93	760.2	30.24	768.1	54	12.2	.....	S	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	W. R. Bigg.
*Chatham, N B	30.23	767.8	30.30	769.6	48	8.9	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	30.22	767.6	30.26	768.6	56	13.3	55	N	10	4.5	.....	5k	0	N	.....	0	0	Fair	H. J. Coudall, C. E.
Cornwall, Ontario	30.03	762.7	30.23	767.8	52.1	11.2	90	S	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	30.11	764.8	30.27	768.8	46.2	7.9	90	W	.....	.....	1	.....	.....	.....	.....	0.03	0.8	Clear.....	H. A. Johnson.
Esquimault, B. C	29.91	759.7	29.96	761.0	46.3	7.9	100	Calm	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	30.21	767.3	30.23	767.8	51	10.6	69	SW	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear.....	J. McWilliams.
Fredericton, N. B	30.27	768.8	30.33	770.4	48.3	9.1	79	N	1	0.4	.....	0	0	.....	.....	0	0	Clear.	Prof. Harrison.
*Fort Garry Manitoba	29.08	738.6	29.92	760.0	38	3.3	100	W	5	2.2	.....	Haze	Haze	.....	.....	0	0	Hazy.....	James Stewart.
Granton, Ontario	29.09	738.9	30.18	766.6	55	12.8	100	S	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.09	764.3	30.23	767.8	55	12.8	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.87	758.7	30.24	768 1	52.5	11.4	90	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.02	762.5	30.04	763.0	48	8.9	78	NW	.....	.....	4	.....	10	.....	.....	0.02	0.5	Overcast....	E. Weedon.
*Kingston, Ontario	29.92	760.0	30.25	768.3	59	15.0	77	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	30.17	766.3	30.20	767.1	54.0	12.2	67	N	13	5.8	.....	7k	0	N	.....	0	0	Cloudy.....	C. H. Rigby.
*Montreal, Quebec	30.06	763.5	30.26	768.6	53	11.7	76	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.44	747.8	30.13	765.3	52	11.1	97	S	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.49	749.0	30.25	768.3	50.7	10.4	96	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.53	750.0	30.23	767.8	49	9.4	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	H. Morgan.
Port Hastings, N. S	30.18	766.6	30.23	767.8	59.5	15.3	.....	NW	16	4.5	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.56	750.8	30.19	766.8	64	17.8	86	S	6	2.7	.....	8k	0	W	.....	0	0	Cloudy.....	M. Payne.
*Quebec, Quebec	29.95	760.7	30.27	768 8	46	7.8	92	W	.....	.....	.....	5k	2s	W	.....	0	0	Fair.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.69	754.1	30.15	765.8	47	8.3	92	E	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	W. H. McIntyre.
St. Andrews, N. B	30.25	768 3	30.30	769.6	51	10.6	72	N	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.13	765.3	30.30	769.6	50	10.0	78	N	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.41	747.0	30.12	765.0	57	13.9	82	S	18	8.0	.....	0	0	.....	.....	0	0	Clear.....	K. Stewart.
Stayner, Ontario	29.39	746.5	30.17	766.3	53	11.7	93	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	R. J. Cole.
Stratford, Ontario	28.91	734.3	30.19	766.8	52.1	11.2	98	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.20	767.1	30.23	767.8	53	11.7	66	N	10	4.5	.....	.....	10ks	.....	N	0	0	Fair.....	T. C. Hill.
*Toronto, Ontario	29.84	757.9	30.22	767.6	54	12.2	97	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy.	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	54.0	12.2	67	N	.....	.....	.....	4ks	4sn	.....	.....	0	0	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'per 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.09	764.3	30.32	770.1	50	10.0	93	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	
Alpena, Michigan	29.34	745.2	29.97	761.2	60	15.6	65	SW	15	5.8	.....	2cs	Haze	W	.....	0	0	Fair	
Atlantic City, New Jersey	30.24	768.1	30.26	768.6	61	16.1	88	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.09	764.3	30.27	768.8	64	17.8	73	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Baltimore, Maryland	30.25	768.3	30.30	769.6	59	15.0	70	N	4	1.8	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.25	768 3	30.27	768.8	65	18.3	68	E	14	6.3	.....	5k	0	NE	.....	0	0	Fair	
Bismarck, Dakota	28.21	716.5	30.07	763.8	44	6.7	76	Calm	0	0	.....	.....	10s	.....	N	0	0	Cloudy	
Boerne, Texas	28.57	725.7	.....	.....	72	22.2	75	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.08	687.8	30.04	763.0	48	8.9	77	SW	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Dense smoke	
Boston, Massachusetts	30.17	766.3	30.33	770.4	58	14.4	64	N	5	2.2	.....	1k	Haze	Calm	Calm	0	0	Hazy	
Brackettville, Texas	28.91	735.1	29.95	760.7	66	18.9	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.96	735.6	29.97	761.2	43	6.1	100	NW	4	1.8	.....	.....	10ks	.....	W	0.01	0.3	Cloudy	
Brownsville, Texas	29.98	761.5	30.05	763.3	65	18.3	94	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.52	749.8	30.22	767.6	53	11.7	80	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	67	19.4	50	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.06	763.5	30.32	770.1	52	11.1	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cairo, Illinois	29.76	755.9	30.14	765.5	63	17.2	83	S	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	52	11.1	66	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	63	17.2	33	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.72	678.7	30.21	767.3	56	13.3	40	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.38	695 4	29.95	760.7	42	5.6	42	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.22	767.6	71	21.7	53	NE	13	5.8	.....	2k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.20	767.1	30.22	767.6	69	20.6	75	N	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.20	767.1	30.22	767.6	68	20.0	84	N	18	8.0	.....	Haze	0	Calm	.....	0	0	Hazy	
Cape May, New Jersey	30.24	768.1	30.27	768.8	62	16.7	77	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.30	744.2	30.01	762.2	59	15.0	94	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.18	766.6	30.24	768.1	69	20.6	56	NE	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.05	610.9	29.99	761.7	46	7.8	92	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Clear	
Chicago, Illinois	29.36	745.7	30.04	763.0	61	16.1	71	SW	16	7.2	.....	8c	0	S	.....	0	0	Threatening	
Cincinnati, Ohio	29.57	751.1	30.23	767.8	55	12.8	90	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.52	749.8	30.25	768.3	54	12.2	87	SE	8	3.6	.....	0	Fog	.....	Calm	0	0	Clear	
Coleman City, Texas	28.30	718.8	29.96	761.0	56	13.3	81	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.39	746.5	30.22	767.6	59	15.0	64	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	28.16	715.3	29.83	757.7	57	13.9	55	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.66	753.4	30.13	765.3	60	15.6	77	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.41	747.0	30.04	763.0	63	17.2	78	SW	8	3.6	.....	7k	Haze	W	Calm	0	0	Fair	
Decatur, Texas	28.95	735 3	30.11	764.8	59	15.0	65	SE	8	3 6	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.33	745.0	30.12	765.0	62	16.7	77	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.82	630.4	30.04	763.0	49	9.4	71	NW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Des Moines, Iowa	29.13	739.9	29.98	761.5	67	19.4	69	W	2	0.9	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Detroit, Michigan	29.50	749.3	30.16	766.1	58	14.4	82	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.33	694.2	29.54	750.3	61	16.1	55	S	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.26	743.2	29.93	760.2	68	20.0	70	SW	5	2.2	.....	6c;ck	0	W;SW	.....	0	0	Fair	
Duluth, Minnesota	29.16	740.7	29.81	757.2	57	13.9	87	NW	20	8.9	.....	.....	10n	.....	NW	0.75	19.1	Light rain	
Eagle Pass, Texas	29.25	742.9	29.98	761.5	62	16.7	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.24	768.1	30.31	769.9	54	12.2	67	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	62	16.7	83	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	70	21.1	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.51	749.5	30.22	767.6	57	13.9	75	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.18	741.2	29.80	756.9	65	18.3	84	S	15	6.7	.....	8ck	0	S	.....	0	0	Cloudy	
Florence, Arizona	28.36	720.3	29.96	761.0	62	16.7	61	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.4	29.59	751.6	52	11.1	59	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.25	641.3	30.21	767.3	64	17.8	36	Calm	0	0	.....	2c	0	S	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.57	751.1	30.10	764.5	62	16.7	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.82	732.0	30.03	764.0	53	11.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.84	707.1	29.71	754.6	66	18.9	69	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.87	733.3	29.97	761.2	56	13.3	81	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.34	719.8	29.89	759.2	62	16.7	61	Calm	0	0	.....	0	0	.....	.....	0	0	Hazy	
Galveston, Texas	30.04	763.0	30.08	764.0	70	21.1	70	N	9	4.0	.....	0	2ks	.....	N	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.39	746.5	30.02	762.5	66	18.8	74	S	15	6.7	.....	2c	2s	W	W	0	0	Fair	
Indianapolis, Indiana	29.40	746.7	30.17	766.3	59	15.0	65	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.06	763.5	30.09	764.3	69	20.6	85	NE	12	5.4	.....	2k	0	NE	.....	0	0	Fair	
Jacksboro, Texas	28.95	735.3	30.07	763.5	69	15.6	65	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.10	764.5	30.12	765.0	75	23.9	81	NE	8	3.6	.....	.....	10s	.....	NE	0.30	7.6	Cloudy	
Keokuk, Iowa	29.41	747.0	30.01	762.2	66	18.9	74	SW	6	2.7	.....	1k	1s	Calm	Calm	0	0	Fair	
Key West, Florida	29.93	760 2	29.96	761.0	83	28.3	79	NE	13	5.8	.....	1c	5ks	W	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.21	767.3	30.23	767.8	71	21.7	58	NE	16	7.2	.....	2k	0	NE	.....	0	0	Fair	
Knoxville, Tennessee	29.28	743.7	30.30	769.6	50	10.0	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
La Crosse, Wisconsin	29.18	741.2	29.88	758.9	68	20.0	60	W	6	2.7	.....	8k	0	W	.....	0	0	Fair	
La Mesilla, New Mexico	26.06	661.9	30.20	767.1	54	12.2	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.63	752.6	29.97	761.2	65	18.3	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.83	630.7	30.10	764.5	42	5 6	91	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.18	741.2	30.01	762.2	61	16.1	82	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.55	750.6	29.88	758.9	59	15.0	76	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.66	753.4	30.22	767.6	57	13.8	69	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Lynchburg, Virginia	29.59	751.6	30.28	769.1	58	14.4	69	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.09	738.9	29.76	755.9	63	17.2	78	SW	12	5.4	.....	8cs	0	SW	.....	0	0	Cloudy	
Mason, Texas	28.45	722.6	30.20	767.1	57	13.9	87	SE	1	0.4	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.85	758.2	30.17	766.3	59	15.0	76	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.24	744.7	29.94	760.5	64	17.8	73	SW	15	6.7	.....	10cs	0	NW	.....	0	0	Cloudy	
Mobile, Alabama	30.10	764.5	30.15	765.8	68	20.0	70	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.95	760.7	30.19	766.8	60	15.6	70	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.21	741.9	30.26	768.6	56	13.3	81	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	24.07	611.4	30.43	772.9	37	2.8	62	NW	3	1.3	.....	0	2s	.....	NW	0	0	Clear	
Nashville, Tennessee	29.71	754.6	30.25	768.3	54	12.2	80	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Smoky	
New Haven, Connecticut	30.20	767.1	30.32	770.1	54	12.2	80	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.27	768.8	30.32	770.1	55	12.8	81	N	4	1.8	.....	0	1s;hz	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	71	21.7	71	E	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.26	768.6	30.31	769.9	57	13.9	75	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.15	765.8	30.32	770.1	58	14.4	62	NE	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.20	767.1	30.26	768.6	67	19.4	74	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.12	688.8	29.70	754.4	44	6.7	92	E	5	2.2	.....	2k	0	E	.....	0	0	Clear	
Olympia, Washington Ter.	29.99	761.7	30.03	762.7	40	4.4	100	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.90	734 0	29.96	761.0	54	12.2	87	N	4	1.8	.....	2k	0	W	.....	0	0	Clear	
Oswego, New York	29.96	761.0	30.29	769.4	51	10.6	86	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	29.10	739.1	29.95	760.7	38	3.3	100	W	7	3.1	.....	0	Haze	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.28	769.1	30.33	770.4	58	14.4	70	NE	14	6 3	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.69	728.7	.....	.....	67	19.4	50	E	.....	.....	2	0	0	.....	.....	0	0	Clear.	
Pike's Peak, Colorado	17.86	453.3	30.08	764.0	27	— 2.8	53	SW	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.95	608.3	29.72	754.9	55	12.8	28	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.45	748.0	30.27	768.8	52	11.1	93	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.49	749.0	30.14	765.5	59	15.0	88	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.27	768.8	30.32	770.1	55	12.8	68	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	29.98	761.5	30.09	764.3	44	6.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Prescott, Arizona	24.76	628.9	30.12	765.0	50	10.0	65	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.34	745.2	30.13	765.3	77	25.0	77	SE	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.01	762.2	30.03	762.7	80	26.7	82	NE	12	5.4	.....	5c	2s	W	NE	0	0	Fair	
Red Bluff, California	29.51	749.5	29.86	758.4	60	15.6	60	S	12	5.4	.....	Haze	Haze	E	Calm	0	0	Hazy	
Rio Grande City, Texas	29.89	759.2	30.11	764.8	70	21.1	53	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.62	752.3	30.24	768.1	51	10.6	79	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Roseburg, Oregon	29.46	748.3	30.04	763.0	40	4.4	91	Calm	0	0	.....	.....	Haze	.....	Calm	0	0	Clear	
Sacramento, California	29.76	755.9	29.84	757.9	54	12.2	74	S	8	3.6	.....	0	Sm'e	.....	Calm	0	0	Smoky	
St. Louis, Missouri	29.58	751.3	30.15	765.8	61	16.1	77	S	5	2.2	.....	5ck	0	Calm	.....	0	0	Fair	
St. Marks, Florida	30.12	765.0	30.13	765.3	71	21.7	75	N	8	3.6	.....	5ck	0	E	.....	0	0	Fair	
St. Paul, Minnesota	29.06	738.1	29.86	758.4	59	15.0	81	W	7	3.1	.....	.....	10s	.....	Calm	0.29	7.4	Cloudy	
Salt Lake City, Utah	25.47	646.9	29.80	756.9	59.0	15.0	59	NW	4	1.8	.....	0	5s	.....	Calm	0.07	1.8	Fair	
San Antonio, Texas	29.40	746.7	29.98	761.5	60	15.6	94	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.86	758.4	29.93	760.2	64	17.8	94	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Sandusky, Ohio	29.54	750.3	30.21	767.3	56	13.3	81	S	11	4.9	.....	0	Haze	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.27	768.8	30.30	769.6	59	15.0	76	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	29.84	757.9	29.91	759.7	54	12.2	87	W	12	5.4	.....	Haze	Sm'e	Calm	Calm	0	0	Smoky	
Santa Fé, New Mexico	23.34	592.8	29.50	749.4	49	9.4	51	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	69	20.6	70	NE	8	3.6	.....	2ck	0	S	.....	0	0	Clear	
Shreveport, Louisiana	29.92	760.0	30.14	765.5	61	16.3	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.34	618.2	.....	.....	51	10.6	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.21	767.3	30.25	768.3	66	18.9	74	N	8	3.6	.....	0	1s	.....	Calm	0	0	Clear	
Springfield, Massachusetts	30.21	767.3	30.34	770.6	54	12.2	74	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.99	685.5	29.99	761.7	55	12.8	50	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.28	769.1	30.33	770.4	59	15.0	76	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.50	749.3	30.17	766.3	58	14.4	70	SE	8	3.6	.....	0	Haze	.....	Calm	0	0	Hazy	
Tucson, Arizona	27.33	694.2	29.88	758.9	68	20.0	52	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	71	21.7	53	NE	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.68	753.9	.....	.....	38	3.3	63	SE	8	3.6	.....	0	Haze	.....	Calm	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	S	.....	.....	1	.....	10ks	.....	SW	0.07	1.8	Cloudy	
Uvalde, Texas	29.18	741.2	29.99	761.7	66	18.9	84	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.28	616.7	29.76	755.9	35	1.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.58	751.3	29.95	760.7	52	11.1	78	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.19	766.8	30.30	769.6	59	15.0	82	NW	4	1.8	.....	0	Fog	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	54	12.2	67	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.15	765.8	30.23	767.8	63	17.2	78	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.51	647.9	29.87	758.7	41	5.0	74	NE	10	4.5	.....	0	2s	.....	Calm	Inap.	Inap.	Fair	
Wood's Holl, Mass	30.25	768.3	30.30	769.6	61	16.1	71	E	2	0.9	.....	Haze	2ks	.....	.....	0	0	Clear	
Yankton, Dakota	28.74	730.0	30.03	762.7	48	8.9	85	NW	3	1.3	.....	2c	5s	W	W	0	0	Fair	
Yuma, Arizona	29.65	753.1	29.81	757.2	74	23.3	36	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.64	752.8	29.69	754.1	34.0	1.1	95	N	9	4.0	.....	2c	0	NW	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.94	760.5	29.96	761.0	82	27.8	83	SE	2.4	1.1	.....	0	0	.....	.....	0.21	5.3	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.87	758.7	29.89	759.2	77	25.0	86	NW	.....	.....	.....	8ck	0	.....	.....	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	83	NW	7	3.1	.....	2c	5n	E	.....	0.5	13.	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	79	26.1	90	Calm	0	0	.....	8c	2s	Calm	N	0.05	1.3	.....	James Gall.
Navassa, W. I	29.80	756.9	29.88	758.9	83	28.3	.....	NNE	6.2	2.8	.....	.....	.....	.....	.....	Blank	Blank	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	84	28.9	75	SE	.....	.....	1	0	3k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	66.5	19.2	82	Calm	0	0	.....	.....	10s;n	.....	.....	0.85	21.6	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 3,369 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m., Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,047.8 ft., or 1,846.2 m. Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 ft., (?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,160 (?) ft., or 353.8 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin, 4,876 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,140.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,562.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.60 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.25	768.3	72.5	22.5	72.5	22.5	76	NE	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Navy Yard, Portsmouth, N.H	30.32‡	770.1‡	.....	.....	53	11.7	73	NNW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.	29.90*	759.4*	75.2	24.0	73.8	23.2	95	SW	.....	.....	5	.....	10n	.....	SW	1.92	48.8	.....	.....	Heavy rain.	
Adams, S. 46° 41′, W. 151° 05′	30.15	765.8	57	13.9	46	7.8	100	S	.....	.....	5	.....	5	.....	S	0	0	Long; rough	S	Fair	
Alliance, Villafranca, France	29.94‡	760.5‡	.....	.....	74	23.3	59	E	.....	.....	0-1	.....	9	.....	S	.....	.....	Light	S	Hazy.....	
Ashuelot, Yokohama, Japan	29.98	761.5	76	24.4	74	23.3	100	SSW	.....	.....	3	.....	10	.....	Calm	.....	.....	Mod'ate	E	Heavy rain..	
Alaska, S. 42° 25′, W. 75° 49′	29.84	757.9	56	13.3	49	9.4	93	WNW	.....	.....	6	.....	10	.....	SE	0.52	13.2	Rough	NW	Squally.....	
Colorado. New York, N. Y.	30.32‡	770.1‡	.....	.....	58	14.4	70	NE	13	5.8	.....	.....	2	.....	ENE	0	0	.....	.....	Hazy.....	
Constitution, Havre, France	30.01‡	762.2‡	.....	.....	62	16.7	88	W	.....	.....	5	.....	9	.....	W	.....	.....	.....	.....	Drizzling.....	
Despatch, Volo, Turkey	29.97‡	761.2‡	.....	.....	81	27.2	78	SE	.....	.....	3	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.32	770.1	68	20.0	66	18.9	89	NNE	1.5	0.7	.....	.....	1	.....	NE	0	0	.....	.....	Clear.....	
Gettysburg Villafranca, France	29.98‡	758.9‡	.....	.....	79	26.1	91	SE	.....	.....	1	.....	8	.....	Calm	0	0	.....	.....	Cloudy.....	
Guard, Bahia, Brazil	30.15	765.8	79	26.1	77	25.0	82	Calm	.....	.....	0	.....	5	.....	NW	.....	.....	.....	.....	Fair	
Hartford, Rio de Janeiro, Brazil	30.11	764.8	.....	.....	71	21.7	55	S	6.0	2.7	.....	.....	10	.....	N	Inap.	Inap.	.....	.....	Overcast.....	
Marion, Naples, Italy	30.05	762.7	79	26.1	76	24.4	73	W	.....	.....	1	.....	8	.....	W	0	0	.....	.....	Fair.....	
Michigan, Erie, Pa.	30.07†	763.8†	.....	.....	57.5	14.2	78	ESE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy, Ura-no-go-ura, Japan	29.91‡	759.7‡	.....	.....	75	23.9	90	SW	.....	.....	2-4	.....	10	.....	SW	.....	.....	.....	.....	Rainy	
New Hampshire, Port Royal, S. C.	30.37†	771.4†	.....	.....	75	23.9	64	NE	19	8.5	.....	.....	2	.....	SW	.....	.....	.....	.....	Clear.....	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	64	17.8	89	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.	30.29	769.4	53	14.4	57	13.9	100	NE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China	30.10	764.5	75	23.9	70	21.1	90	ESE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. New York, N. Y.	30.30	769.6	61	16.1	64	17.8	??	NNE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger. Hong-Kong, China	29.90	759.4	82	27.8	83	28.3	87	W	.....	.....	1	.....	8	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas	30.00	762.0	69	20.6	68	20.0	95	NNW	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.21‡	767.3‡	.....	.....	62	16.7	77	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, League Island, Pa	30.04*	763.0*	.....	.....	58	14.4	82	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.15	765.8	62	16.7	62	16.7	72	NNE	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France	30.09	764.3	66	18.9	63	17.2	67	NW	.....	.....	6	.....	8	.....	.....	.....	.....	.....	.....	Squally.....	
Swatara, Boston, Mass.	30.33‡	770.4‡	.....	.....	56	13.3	75	N	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	29.91‡	759.7‡	.....	.....	68	20 0	56	NW	.....	.....	4	.....	8	.....	N; W	1.0	25.	.....	.....	Cloudy.....	
Tuscarora, La Paz, Mexico	29.68	753.9	78	25.6	78	25.6	65	SE	.....	.....	0-1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia, Villafranca, France	29.94‡	760.5‡	.....	.....	74	23.3	72	ESE	.....	.....	1	.....	5	.....	SE	.....	.....	.....	.....	Fair	
Wabash, Boston, Mass.	30.31‡	769.9‡	.....	.....	54	12.2	80	NNW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Upper	Lower	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S City of Peking, N. 36° 30', W. 142° 14'		30.22†	767.6†	68	20.0	60	E	22	9.8			0		E				D. clouds	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima																			Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, Tacoma, W. T.		30.02†	762.5†	62	11.1	100	Calm			0		0			0			D. smoke	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghost.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 42° 20' W. 68° 25'		30.16*	766.1*	63	17.2	100	NE			5		Sck		NE		Mod'ate	NE	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 31° 25', E. 132° 45'		29.72*	754.9*	83	28.3	87	SE			6		ks		SE		Rough	Cross	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.72†	754.9†	81	27.2	96	Var.			3		s		Var.	0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 40° 43', W. 18° 48'		30.14	765.5	63	17.2	72	WSW			3		4		SW		6	NW	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 41° 50', W. 50° 50'		30.05*	763.3*	67	19.4	100	NNE			2		6		NE	Heavy	Cross	WSW	Cloudy	Captain Sargent.
S. S. Ohio, N. 50° 56', W. 34° 50'		29.64	752.8	63	17.2	94	SW			4		7		SW	Small	Rough	SW	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Rundle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 31° 58', W. 66° 59'		29.94	760.5	82	27.8	71	Calm	0	0			5k		NW	0	Swell	SE	Cloudy	Capt. James Jorgensen.
Schooner Florence, N. 57° 10', W. 58° 27'		30.21*	767.3*	34.8	1.6		NW			3.5	0	10kts		NW	0			Cloudy	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 17, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.05	763.3	70.7	21.5	87	E	.....	.....	1	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	30.10	764.4	80.6	27.0	93	N	.....	.....	3	.....	2	.....	.....	0	0	Fair	Kesxuche.
Algiers	.....	.....	30.05	763 3	80.2	26.8	67	NE	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Tourillere.
La Calle	.....	.....	30.10	764.6	81.5	27.5	68	NW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Foufrede.
Tunis	.....	.....	30.11	764.7	82.4	28.0	52	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.15	765.7	82 4	28 0	.....	WNW	.....	.....	3	.....	0	.....	.....	0	0	Clear	Gau.
Saida	.....	.....	30.09	764.3	86.0	30.0	21	N	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.09	764.2	76.1	24.5	42	NW	.....	.....	4	.....	2	.....	.....	0	0	Fair	Watrin.
Geriville	.....	.....	30.13	765 2	82.5	28.2	53	SE	.....	.....	4	.....	6	.....	.....	0	0	Clear	Brugnlaux.
Laghouat	.....	.....	30.15	765.7	83.1	28.4	30	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.11	764.9	92.5	33.6	28	NW	.....	.....	3	.....	2	.....	.....	0	0	Fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,068? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.64	752.8	30.18	766.6	64.8	18.2	66	SE	.....	.....	2	.....	7	.....	.....	0.016	0.4	.....	Prof. Ivan Storlr.
Cracow, I. R. Observatory	29.24	742.7	30.00	762.0	59.7	15.4	64	NNW	.....	.....	4	.....	6	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.07	738 4	29.93	760.3	61.9	16 6	50	NW	.....	.....	1	.....	8s	.....	SE	0.494	12.55	.....	Julius Mikolik.
Gratz	28.87	733.4	30.11	764.7	64.8	18.2	61	NW	.....	.....	4	.....	7	.....	.....	0.004	0.10	.....	Andreas Rospini.
Hermannstadt	28.41	721.7	29.80	758.5	62.4	16.9	60	NW	.....	.....	5	.....	9	.....	.....	0.199	5.05	.....	Prof. A. Gottschling.
Kremsmünster	28.81	731.7	30.13	765.4	60.4	15.8	61	W	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	28.98	734.7	29.91	759 6	56.3	13.5	70	NW	.....	.....	2	.....	9	.....	.....	0.126	3.2	.....	Dr. T. Stanecki.
Pola	29.03	760.1	30.04	762.9	72.1	22.3	53	E	.....	.....	4	.....	8as	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.53	750.1	29.99	761.7	61.9	16.6	51	N	.....	.....	5	.....	5	.....	.....	0.031	0.8	.....	Julius Csics, S. J.
Szegedin	29.76	755.8	30.03	762 8	64.8	18.2	79	N	.....	.....	4	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.97	761.3	30.08	763.9	71.6	22.0	59	ENE	.....	.....	2	.....	1	.....	.....	0	0	Almost clear	P. Busin.
Vienna	29.43	747.5	30.14	765.6	59.9	15.5	50	NW	.....	.....	2	.....	9	.....	.....	0.154	3.9	.....	I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Passau.
Brussels	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Royal Observetory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.35	745.5	29.44	747.8	65.1	18.4	.....	WSW	23	10.3	.....	.....	7	.....	.....	0	0	D. clouds....	W. Boswell.
Ardrossan	29.58	751.3	29.59	751.6	62	16.7	.....	WSW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	29.73	755.1	59.6	15.3	.....	SW	17	7.6	.....	.....	10	.....	.....	.....	.....	Raining	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.81	757.2	61.3	16.3	.....	WSW	23	10.3	.....	.....	10	.....	.....	.....	.....	Raining.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.38	746.2	29.77	756.1	64.0	17.8	.....	W	.....	.....	6	.....	7	.....	.....	0.09	2.3	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	30.02	762.5	30.04	763.0	84	28.9	.....	SE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.93	760.2	66.0	18.9	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H.C.
Cardington	.....	.....	29.95	760.7	65.0	18.3	.....	W	.....	.....	4	.....	9	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.89	759.2	30.02	762.5	64.7	18.2	.....	SW	.....	.....	2	.....	5	.....	.....	.....	.....	Blue sky	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.60	726.4	30.06	763.5	57.0	13.9	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Rain and fog	Alexander Watt.
Donaghadee	29.65	753.1	29.68	753.9	65	18.3	.....	W	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	30.00	762.0	30.03	762 7	63	17.2	.....	WSW	.....	.....	5	.....	8	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.89	756.9	61.8	16.6	.....	SW	8.0	3.6	.....	.....	10	.....	.....	.....	.....	Raining	Thomas Mackereth.
Falmouth, Observatory	29.88	758.9	30.11	764.8	63.9	17.7	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	86.5	30.3	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	29.76	755.9	62	16.7	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Misty.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8	.....	.....	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.37	746.0	29.58	751.3	61.4	16.3	.....	WSW	.....	.....	8	.....	10	.....	.....	.....	.....	Squally.....	D. G. Maclean.
Greenwich, Royal Obs'y	29.87	758.7	29.88	758.9	65	18.3	.....	WSW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	G. T. Watson.
Guernsey	29.82	757.4	29.98	761.5	67.8	19.9	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Helston	29.94	760.5	30.16	766.1	63.5	17.5	.....	WSW	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Holyhead	.....	.....	30.19	766.8	65	18.3	.....	SW	.....	.....	4	.....	4k	.....	.....	0	0	Gloomy.....	M. P. Moyle.
Jersey	29.77	756 1	29.82	757.4	65	18.3	.....	SW	.....	.....	5	.....	5	.....	.....	.....	.....	Blue sky.....	John Tilston.
Kew, Observatory	29.93	760.2	30.22	767.6	64.5	18.1	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast	J. Fisher.
Kingstown	29.97	761.2	30.01	762.2	64.7	18.2	.....	SW	21	9.4	.....	.....	10sd	.....	.....	.....	.....	Threatening	The Staff.
Leicester, Museum	29.78	756.4	29.81	757.2	64	17.8	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Malta, (Mediterranean)	.....	.....	29.88	758.9	66.2	19.0	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Nairn	29.88	758.9	29.95	760.7	81	27.2	.....	NW	.....	.....	1	.....	3c	.....	.....	.....	.....	D. clouds.....	Sergt. Beckett.
Nassau, (Bahamas)	29.34	745.2	29.41	747.0	60	15.6	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nottingham, Observatory	.....	.....	30.01	762.2	83.0	28.3	.....	NE	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Oscott, St. Mary's College	29.69	754.1	29.88	758.9	69.0	20.6	.....	SSW	.....	.....	4	.....	10k;d	.....	SW	0.001	0.03	Overcast.....	E. J. Lowe, F. R. S.
Oxford, Radcliffe Obs'y	29.37	746.0	29.88	758.9	65.1	18.4	.....	SW	.....	.....	5–6	.....	10	.....	.....	.....	.....	Overcast	Rev. Stephen Whitty.
Plymouth	.....	.....	30.10	764.5	61	16.1	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Roche's Point	30.02	762.5	30.10	764.5	63.0	17.2	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Saint Ann's Head	29.91	759.7	29.95	760.7	62	16.7	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Dull.....	W. Kennedy.
Sandwick Manse, (Orkneys	29.80	756.9	29.96	761.0	62	16.7	.....	WSW	.....	.....	7	.....	7	.....	.....	.....	.....	Misty.....	John C. Walker.
Scutari, Cemetery, (Turkey	.....	.....	29.32	741.7	54.8	12.7	.....	W	25	11.2	.....	.....	10	.....	.....	.....	.....	Drizzling.....	Rev. C. Clouston, LL. D.
Sheffield	29.56	750.8	29.73	755.1	75.6	24.2	.....	SW	.....	.....	1	.....	8	.....	.....	Blank	Blank	D. clouds.....	Sergt. W. H. Lyne.
Silloth, Rectory	29.65	753.1	29.84	757.9	65.1	18.4	.....	SW	.....	.....	3	.....	8	.....	.....	0.26	6.6	Overcast.....	W. F. Cooper.
Stonyhurst, Observatory	29.41	747.0	29.68	753.9	61.0	16.1	89	W	.....	.....	5	.....	10	.....	.....	0.220	5.59	Overcast.....	C. Edith Redford.
Stornoway, Lews C., (Hebr.)	29.81	757.2	29.92	757.4	59.2	15.1	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	Rev. S. J. Perry.
Stratfield Turgiss	.....	.....	30.03	762.7	65.4	18.6	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	.....	John Sutherland.
Thurso	.....	.....	29.33	745.0	58	14.4	.....	W	.....	.....	4	.....	9	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S
Truro, Royal Institution	.....	.....	30.12	765.0	64	17.8	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	John Trotter.
Valencia, Observatory	29.88	758.9	29.91	759.7	62.8	17.1	.....	SW	29	13.0	.....	.....	10	.....	.....	.....	.....	Raining	W. Newcombe.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.92	760.0	53.0	11.7	88	S	.....	.....	2	.....	4k	.....	.....	Blank	Blank	Misty.....	The Staff.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	.....	Francis Abbott, F.R.A.S.
Mauritius, Observatory	30.01	762.2	30.20	767.1	73.7	23.2	66	SE	19.5	8.7	.....	4	1	.....	.....	.....	.....	.....	Andrew Gibb.
Melbourne, Observatory	29.83	757.7	29.92	759.9	54.0	12.2	80	NE	4	1.8	.....	.....	5	.....	.....	0.09	2.3	Squally.....	C. Meldrum.
Monach Li't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Fine.....	R. L. J. Ellery.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 24° 35', W. 31° 10'	3	ESE	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	Smooth	.....	.....	Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 40° 30', W 59° 45'	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	5	NE	Raining.....	Capt. W. Spratly.
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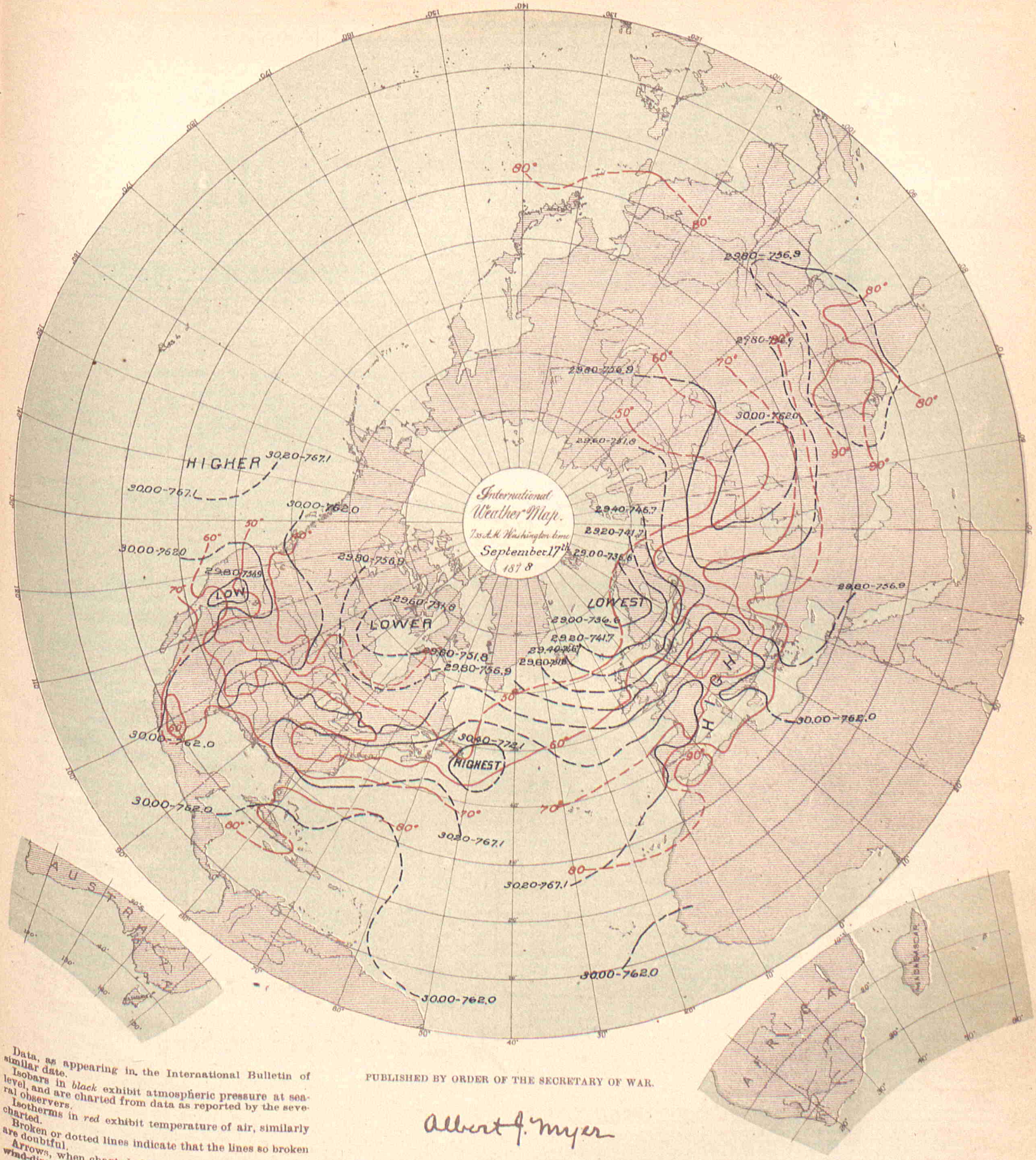
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.23	666.2			67.6	19.8	98	SE			1	1c;k	3s			0.3	8.		Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.56	750.8	29.61	752.0	54.7	12.6	82	WSW			4		10						
Fanöe	29.52	749.9	29.54	750.4	58.6	14.8	89	W			7		10					Raining	
Godthaab, (Greenland)																		Raining	
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.11	739.5	29.15	740.4	48.7	9.3	62	NW			5		3						
Vestervig	29.19	741.5	29.36	745.8	59.0	15.0	89	W			8		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.72	755.0	30.28	769.0	68.7	20.4	80	NW			4		10			0.047	1.2	Covered	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	30.03	762.8	30.11	764.8	74.3	23.5	35	NNW			4		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.71	754.6	30.26	768.7	62.6	17.0	58	W			2		8kn		W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.92	759.9	30.20	767.1	64.8	18.2	62	W			2		5		W	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.37	746.0	30.26	768.6	61.5	16.4	58	SSW			2		2		SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.59	751.6	30.13	765 3	63.5	17.5	76	SW			1		1		SW	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.94	760.5	30.18	766.6	68.7	20.4	72	SW			4		9		SW	0	0	Misty	The Staff.
Carcassonne, Normal School	29.79	756.6	30.18	766.6	82.4	28	40	W			1		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.68	753.8	30.24	768.0	64.8	18.2	80	SW			6		5	NE	NE	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.94	760.5	30.26	768.5	65.3	18.5	77	W			1		8	NW	NW	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.90	734.0	30.23	767.9	66.7	19.3	46	NE			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.38	746.2	30.25	768.3	60.8	16	93	W			1		5cn		W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.99	736.3	30.13	765.3	79.5	26.4	25	W			2		0			0	0	Clear	M. King.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	30.08	764.0	30.30	769.5	58.6	14 8	92	W			1		2		SW	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.97	761.2	30.28	769.0	64.4	18	59	WSW			3		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.40	746.7	30.30	769.7	64.4	18	53	N			1		5		N	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.26	768.7	30.30	769.5	63.3	17 4	80	N			3		0						M. Galzin, Director
Mirecourt, Normal School	29 21	741.8	30.24	768.2	61.5	16.4	66	W			1		2ck		W	0.24	6.	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.83	757.7	30.00	762.1	84.6	29.2	57	S			4		0			0	0		Boyer, Director.
Privas, Normal School	29.07	738.4	30.12	765.0	68.0	20	51	N			4		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.41	645.3			46.2	7.9	80	NW			1		5		W	0	0	Cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.28	769.1	30.31	769.9	71.6	22.0	63	NW			3		5	NW	NW	0	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	30.10	764.6	30.19	766.8	64.6	18.1	63	SW			1		10		SW	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			30.21	767.2	67.5	19.7	54	WSW			3		5		SSW	0	0	Cloudy.	M. H. Hercouet.
Saint Maur, (near Paris)	30.05	763.2	30.21	767.4	65.1	18.4	57	SW			1		10		W	0	0		E. Renou.
Tarbes, Normal School	29.21	741.9	30.27	768.8	66.2	19	72	WSW			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique.	29.89	759.1	29.91	759.8	81.0	27.2													
Lyons			30.28	769.1	65.5	18.6	59						1			0	0		L'Abbé Marchés.
Marseilles, Observatory			30.04	763.1	77.0	25.0	40	WNW			2		0			0.008	0.2		L. Jays.
Mont-Louis	25.09	637.2	30.01	762.2	68.9	20 5	10	SE			2		0			0	0	Clear	The Staff.
Nice			30.04	762.9	74.1	23.4	80	SE			2		0			0	0		M. Cave.
Paris, Montsouris Obs'y	29.93	760.3	30.21	767.3	65.3	18.5	56	WSW			1		0			0	0		Dr. A. Niepce.
Perpignan			30.18	766.6	75.6	24.2	42	N	20.5	9.17	4		10		WSW	0	0		Marié Davy, Director
Pic du Midi, (Summit,) H. P.													0			0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	22.82	579.7			65.1	18.4													M. Baylac.
Toulouse, Observatory	29.59	751.5	30.32	770.0	66.9	19.4	46	N			1		0			0	0	Clear	Gen'l de Nansouty.
Tours	30.07	763.7	30.26	768.7	66.4	19.1	51	WNW			2		0			0	0		The Staff.
Versailles			30.22	767.6	65.1	18.4	49	W			1		5		WNW	0	0		C. Marquet.
Zi-Ka-Wei, (near Shanghai)	29.77	756.2	29.80	756.8	73.4	23.0	83	NNE	11.2	5.0	2		7			0	0	Cloudy	Dr. A. Bériguy.
													10n			0.008	0.2	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.8	30.09	764.3	59.7	15.4	51	W			4		6	W		0	0		Prof. Dr. Hoh.
Berlin	29.78	756.3	29.95	760.6	61.3	16.3	61	SW			3		10			0.236	6.0	Raining	Prof. Arndt.
Breslau	29.48	748.9	30.02	762.4	60.8	16.0	46	W			6		8			0.024	0.61		Royal University Obs'y
Carlsruhe	29.75	755.6	30.17	766.4	64.8	18.2	53	W			2		2			0	0		Albert Senz.
Cassel	29.45	748.0	30.06	763.5	63.7	17.6	51	SSW			4		7	SW		0.047	1.20		Dr. H. Möhl.
Crefeld	29.87	758.6	30.03	762.7	66.7	19.3	57	SW			7		7k			0.20	5.		Director Lose.
Emden	29.84	757.9	29.87	758.8	60.8	16.0	79	W			9		10			0.220	5.6		Prof. Prestel.
Frankfort on the Main	29.76	755.9	30.12	765.0	66.2	19		W			4		6			0.236	6.0		Physical Society.
Friedrichshafen	28.78	720.9	30.19	766.9	62.2	16.8	64	NW			4		2	WNW		0	0		M. Wilhelm.
Hamburg	29.75	755.7	29.82	757.3	57.4	14.1	86	WSW			7		10			0.197	5.0	Squally	Captain F. Hegemann.
Kiel	29.70	754.4	29.72	754.8	56.8	13.8	92	WSW			6		10			0.200	5.08		Prof. G. Karsten.
Königsberg, (Prussia)	29.66	753.4	29.74	755.5	58.6	14.8	67	W			7		6			0.406	10.3		Prof. E Luther.
Köslin			29.74	755.5	57.4	14.1		SW			4		4			0.248	6.3		H. Müller.
Leipsic, Observatory	29.62	752.3	30.04	762.9	60.3	15.7	56	WSW			5		10			0.067	1.7		Prof. Bruhns.
Memel, Naval School	29.61	752.0	29.65	753.2	58.6	14.8	75	SW			7–8		6c;n	SW				Squally	Reinbrecht and Skalweit.
Neufahrwasser	29.75	755.7	29.77	756.1	60.4	15.8	59	SW			6		7			0	0		A. Lothes.
Posen	29.67	753.6	29.95	760.8	60.8	16.0	50	W			6		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.69	754.2	30.24	768.0	65.1	18.4	52	W			4		8	W		0.049	1.25		Astronomical Observatory.
Stuttgart	29.21	742.6	30.14	765.6	63.1	17.3	48	W			1		3	W		0	0		Prof. Schoder.
Treves, (Trier)	29.61	752.1	30.13	765.4	63.7	17.6	55	SW			7		4			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.67	728.2	30.15	765.8	58.8	14.9	56	W	7.2	3.2			5ck		W	0.126	3.2		Dr. Von Bebber.
Wustrow, Naval School	29.73	755.2	29.77	756.2	58.3	14.6	100	SW			8		10			0.008	0.2		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.41	747.1	29.79	756.6	84.6	29.2		E			0.5							⅛ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.52	749.7	29.56	750.9	86.5	30.3	79	W	35?	15.6?			9			0	0		D. clouds
Deesa	29.06	738.0	29.52	749.7	90.6	32.6	66	N					9	NE	NNE	0	0		D. clouds
Bombay	29.53	750.1	29.57	751.1	79.9	26.6	92	W	24	10.7			10		WSW	2.58	65.5		Overcast
Poona	27.66	702.5	29.64	753.0	77.7	25.4	75	W					10		W	0.32	8.1		Overcast
Lahore	28.77	730.7	29.48	748.8	95.7	35.4	47	Calm	0.8	0.4			0			0	0		Blue sky
Belgaum	27.16	689.8	29.70	754.4	71.8	22.1	93	W	17	7.6			8		W	0.40	10.2		Showery
Roorkee	28.66	728.0	29.55	750.6	80.8	27.1	58	Calm	2	0.9			7			0	0		
Agra	28.97	735.8	29.52	749.8	90.2	32.3	63	Calm								0	0		
Nagpur	28.49	723.7	29.53	750.0	78.9	26.1	93	Calm	6.7	3.0			10			0.92	23.4		Drizzling
Lucknow																			
Allahabad	29.19	741.4	29.49	749.1	86.4	30.2	79	ENE	3.9	1.7			10		E	0	0		Overcast
Patna	29.36	745.6	29.53	750.2	87.4	30.8	76	E	1.4	0.6			4	SE	SE	0.16	4.1		D. clouds
Hazaribagh	27.55	699.9	29.54	750.4	78.8	26.0	85	E	9.8	4.4			1			0.25	6.4		Showery
Cuttack	29.48	748.7	29.56	750.8	82.0	27.8	83	NE	1	0.4			6			0.18	4.6		D. clouds
Calcutta (Alipore)	29.54	750.2	29.56	750.8	82.7	28.2	96	ESE	2	0.9			1			0	0		D. clouds
Goalpara	29.20	741.6	29.58	751.3	82.0	27.8	83	Calm	2	0.9			3			0	0		D. clouds
Chittagong	29.52	749.9	29.62	752.2	85.5	29.7	85	Calm	1.9	0.8			10			0	0		Gloomy
Sibsagar	29.23	742.3	29.55	750.6	88.8	31.6	67	Calm	0.7	0.3			4			0	0		Blue sky
Jubbulpore	28.15	715.0	29.50	749.4	78.3	25.7	93	SE	5.6	2.5			10			0.15	3.8		Overcast

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.68	753.8	30.08	763.9	72.0	22.2	51	E	2.5	1.1	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760.8	30.06	763.5	74.1	23.4	66	SE	6.9	3.1	.....	.....	3	ENE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.86	758.5	30.05	763.2	75.4	24.1	65	E	1.3	0.6	.....	.....	2	E	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.99	736.3	30.03	762.8	73.8	23.2	62	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.53	750.1	30.04	762.9	75.9	24.4	67	ENE	.....	.....	2	.....	5	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.15	740.5	30.03	762.8	75.9	24.4	48	W	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.7	30.03	762.8	72.7	22.6	43	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.83	757.7	30.05	763.2	73.0	22.8	76	E	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.87	758.7	30.04	762.9	75.6	24.2	62	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.73	755.2	30.04	763.0	77.2	25.1	46	SSE	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.77	756 1	30.02	762.4	80.6	27.0	44	NE	.....	.....	2	.....	2	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.91	759.7	29.99	761.8	75.4	24.1	64	NNW	4.9	2.2	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.00	762.0	30.05	763.2	75.0	23.9	66	E	.....	.....	.....	.....	4	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28 52	724.4	30.03	762.8	68.2	20.1	68	NE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.83	757.7	30.00	762 0	80.8	27.1	45	NNW	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.81	757.1	30.00	762.1	80.4	26.9	55	SW	.....	.....	2	.....	4	NE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.69	754.2	29.94	760.4	74.8	23.8	65	NNW	12.5	5.6	.....	.....	4	NNW	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.88	758.9	30.07	763.6	75.4	24.1	45	NW	.....	.....	6	.....	2	N	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.10	739.2	29.96	761.0	70.3	26.3	70	NW	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.77	756.2	30.02	762.5	78.8	26.0	57	E	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	Prof. G. Caccialore.
Syracuse	29.92	760.0	30.00	761.9	78.3	25.7	59	E	2.5	1.1	.....	.....	3	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.47	748.4	30.02	762.5	77.9	25.5	64	WSW	0	0	.....	.....	2	W	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.63	752.6	29.83	757.7	72.9	22.7	97	NNE	4.7	2.1	.....	.....	10n	.....	.....	2.790	70.87	Rainy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.99	761.7	30.06	763.5	71.8	21.8	98	E	5.4	2.4	.....	..	10n	.....	.....	0.390	9.91	Light rain	
Tokei (Yeddo) University	29.89	759.2	29.99	761.7	71.2	21.8	100	E	9.5	4.2	.....	.....	10n	.....	.....	0.88	22.35	.....	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.8	18.2	81	N	.....	.....	2	0	1s	.....	.....	0.055	1.4	Clear	P. Ceballos.
Guadalajara	25.09	637.3	30.05	763.3	58.1	14.5	73	SE	.....	.....	1	8cs	0	SW	.....	0.030	1.0	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexico	24.45	621.2	30.00	762.0	61.7	16.5	85	NW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Pabellon, (Aguascalts)	23.15	588.0	30.10	766.0	55.0	12.8	90	Calm	0	0	.....	9k	0	.....	.....	0	0	Cloudy	Central Observatory.
Puebla	.....	.....	.....	.....	59.5	15.3	80	N	.....	.....	1	0	1s	.....	.....	0	0	Clear	M. V. de Leon, M. E
Tlacotalpam	23.37	593.6	30.02	762.6	68.4	11.9	84	N	2.1	0.9	.....	5kn	4ns	E	Calm	0	0	Cloudy	M. V. de Leon, C. E.
San Luis Potosi	29.92	760.0	29.93	760.3	77	25	89	NNW	.....	.....	2	2ck	7n	NE	WNW	0.020	0.5	Misty	Prof. R. Gonzalez.
Vera-Cruz	24.27	615.8	30.19	766.7	61.0	16.1	77	ESE	.....	.....	.....	.....	10	.....	ESE	0	0	Covered	M, M. Cházaro.
Zacatecas	30.01	762.4	30.04	763.0	77.9	25.5	83	NW	.....	.....	.....	.....	9ks	.....	.....	0.292	7.4	Very cloudy	G. Barroeta, M. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	51.8	11.0	78	NE	.....	.....	2	3	5	SW	NE	0	0	Dense fog	Prof. J. Rossell.
Durango	23.30	591.9	30.02	762.6	52.3	11.3	82	N	0	0	.....	0	4	.....	E	0.001	0.02	Light mist	J. A. Bonilla, M. E.
Colima	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. Spina, [M.M. D. D
San Juan E. Michapam	28.24	719.8	29.95	760.7	80.6	27.0	90	E	0.8	0.4	.....	4	4	S	SE	0	0	Very cloudy	M. V. de Leon, C. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Banda, C. E.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.6 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.03	762.7	30.03	762.7	64.4	18.0	.....	SW	.....	.....	6	.....	.....	.....	.....	0.020	0.5	.....	
Groningen	29.80	756.9	29.85	758.3	59.9	15.5	.....	SW	.....	.....	5	.....	.....	.....	.....	0.059	1.5	.....	
Helder	29.87	758.6	29.87	758.6	62.1	16.7	.....	SW	.....	.....	5	.....	.....	.....	.....	0.110	2.8	.....	
Hellevoetsluis	29.97	761.2	29.97	761.2	62.6	17.0	88	SW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.93	760.3	29.98	761.5	63.5	17.5	76	WSW	.....	.....	6	.....	8	.....	.....	0.008	0.2	Very cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.13	740 0	29.19	741.4	51.8	11.0	80	Calm	0	0	.....	.....	8	.....	.....	0.673	17.1	Raining	
Brönö	28.89	733.8	28.93	734.8	50 7	10.4	74	SW	27	12	.....	.....	10	.....	.....	0.543	13.8	Light rain...	
Christiania	29.01	736.8	29.15	740.4	61.3	16.3	51	SSW	13	6	.....	.....	10	.....	.....	0.004	0.1	....	
Tromsö	28.82	731.9	28.86	733.0	58.3	14.6	74	SW	9	4	.....	.....	10	.....	.....	0.291	7.4	... .	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.18	766.6	30.37	771.3	74.8	23.8	90	S	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.14	740.2	30.09	764.3	95 0	35.0	16	NE	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.6	30.14	765.6	77.0	25.0	62	SW	9.4	4.2	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.9	30.15	765.7	80.8	27.1	52	SSE	4.9	2.2	.....	.....	3	SW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.32	770.2	30.39	771.9	78.8	26.0	66	SE	0.7	0.3	.....	.....	6	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.															Sea or swell. Height scale 0–9	Sea or swell. Direction from—			
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.	
D. Fernando, N. 39° 27′, W. 11° 40′	.....	.....	30.29	769.4	72.9	22.7	.....	NNE	.....	.....	5	.....	3	.....	NNE	3	NNE	D. clouds.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 12° 49′, E. 12° 40′	.....	.....	30.06	763.5	74.8	23.8	.....	W	.....	.....	2	.....	4	.....	W	1	.....	D. clouds.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	30.02	762.5	79.2	26.2	.....	WNW	.....	.....	2	.....	4	.....	WNW	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	30.00	761.9	86.5	30.3	.....	NNE	.....	.....	4	.....	3	.....	Calm	3	NE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.67	753.6	82.4	28.0	.....	NNW	.....	.....	2	.....	0	.....	.....	0	.....	Blue sky.....	M T. Guimaraes, Com'd't.

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.89	759.1	60.8	16.0	40	W	18	8	.....	.....	7ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.32	744.7	29.73	755.1	58.1	14.5	75	SW	2	1	.....	.....	9	.....	.....	.....	.....	Heavy clouds...	Astronomical Obs.
Dorpat	29.24	742.8	29.48	748.8	62.2	16.8	68	SW	11	5	.....	.....	8cn	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.45	747.9	29.46	748.3	56.1	13.4	94	SW	9	4	.....	.....	10n	.....	.....	.....	.....	Raining.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.06	738.2	29.68	753.8	63 7	17.6	89	NW	7	3	.....	.....	10n	.....	.....	.....	.....	Raining.....	Physical Cabinet.
Nikolaiev	29.65	753.2	29.72	755.0	81.3	27.4	42	SSW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.72	755.0	29.74	755.5	75.2	24.0	81	SE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.29	744.0	29.82	757.3	71.4	21.9	53	SE	9	4	.....	.....	2ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.56	750.7	29.76	755.8	72.3	22.4	42	ESE	4	2	.....	.....	2s	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	29.58	751.4	29.60	751.9	63.9	17.7	65	SSE	13	6	.....	.....	4ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.45	722.6	29.80	756.9	75.4	24.1	48	SE	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.06	763.4	29.97	761 3	68.2	20.1	54	SE	4	2	.....	.....	4k	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.52	749.7	29.98	761.5	61.9	16.6	52	ESE	7	3	.....	.....	1ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.74	755.3	30.09	762.0	63.5	17.5	47	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.94	735.0	29.89	759.2	47.1	8.4	66	NW	13	6	.....	.....	7ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tashkend	28.37	720.5	30.03	762 7	67.3	19.6	71	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.20	741.6	29.71	754.7	53.4	11.9	91	SSW	0	0	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.43	747.5	29.71	754.7	56.5	13.6	85	ENE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.82	757.5	29.97	761.1	72.1	22.3	84	Calm	0	0	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	75.2	24	65	SE	2.1	0.94	.....	2	8	W	.....	0.042	1.07	Almost cov'd	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.21	767.4	30.27	768.8	76.8	24.9	53	NW	1.9	0.83	.....	2	4	NE	.....	0.071	1.8	Cloudy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.39	693.4	.....	.....	72 0	22.2	62	NE	8.9	4.00	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.96	710.3	30.06	763.4	90.7	32.6	25	SW	2.2	1.00	.....	.....	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	29.97	761.1	30.11	764.7	92.8	33.8	45	ENE	3.4	1.53	.....	0	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.29	744.0	30.17	766.2	72.1	22.3	93	NE	13.7	6.11	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.93	760.3	30.00	762.0	80.1	26.7	86	Calm	0	0	.....	3c	1k	.....	.....	0.280	7.1	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.01	762.2	30.10	764.6	93.6	34.2	27	ESE	19.0	8.5	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.83	757.7	29.92	760.0	82.4	28.0	88	SW	0	0	.....	6s	3k	S	S	0	0	Cloudy.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.15	740.3	29.19	741.3	52.9	11.6	.....	S	.....	.....	4	.....	10	.....	.....	0.472	12.0	.....	
Umea	28.99	736.4	29.04	737.7	54.0	12.2	87	S	.....	.....	4	.....	9	.....	.....	0.055	1.4	.....	
Hernosand	28.90	734.0	28.95	735.3	56.1	13.4	80	S	.....	.....	4	.....	9	.....	.....	0.157	4.0	.....	
Stockholm	29.05	737.8	29.22	742.3	54.3	12.4	89	SW	.....	.....	4	.....	10	.....	.....	0.157	4.0	.....	
Wisby	29.31	744.5	29.37	746.0	60.1	15.6	55	W	.....	.....	8	.....	7	.....	.....	0.150	3.8	.....	
Sub-Series.																			
Upsala	29.09	738.8	29.16	740.7	55.8	13.2	56	SW	18.6	8.3	.....	.....	10	.....	WSW	0.064	1.62	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.81	731.8	30.21	767.2	65.5	18.6	51	N	.....	.....	1	.....	3c	.....	.....	0	0	.....	The Observatory.
Zurich	28.61	726.6	30.21	767.4	63.3	17.4	63	W	.....	.....	2	.....	4	.....	.....	0	0	Bright	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.8 mm.; Thermometer, +0.7 cent.; Relative Humidity, —12 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.78	756.5	75.4	24.1	69	SE	7	3.0	.....	.....	9	.....	WNW	0.866	22.0	.....	The Observatory.
Valona	.....	.....	30.04	762.9	75.6	24.2	.....	NW	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.67	753.6	29.78	756.5	88.9	31.6	52	W	.....	.....	3	.....	4k	.....	.....	0.02	0.5	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.03	762.7	30.10	764.5	55.0	12.8	80	SW	26	11.6	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.77	756.1	30.07	763.8	63	17.2	.....	SW	5	2.2	.....	.....	10s	.....	SW	0	0	Cloudy	W. R. Bigg.
*Chatham, N. B	30.14	765.5	30.20	767.1	51	10.6	79	SW	9	4.0	.....	2c	0	SW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.24	768.1	30.29	769.4	58	14.4	76	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.00	762.0	64.0	17.8	70	SW	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.94	760.5	30.10	764.5	53.3	11.8	85	SW	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	29.94	760.5	29.98	761.5	44.3	6.8	100	N	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.91	759.7	29.93	760.2	60	15.6	65	S	36	16.1	.....	.....	10s	.....	S	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.21	767.3	30.27	768.8	52.1	11.2	81	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	29.09	738.9	29.92	760.0	44	6.7	96	NW	5	2.2	.....	5k	5ks	NW	NW	0	0	Cloudy	James Stewart.
Granton, Ontario	28.98	736.1	30.07	763.8	68	14.4	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.13	765.3	30.27	768.8	58	14.4	76	S	3	1.3	.....	.....	8ks	.....	S	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.74	755.4	30.10	764.5	65.2	18.4	78	SW	.....	.....	3	4c	0	W	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	30.40	772.1	30.42	772.7	50	10.0	65	SW	.....	.....	2	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.76	755 9	30.08	764.0	65	18.3	82	S	12	5.4	.....	5cs	5ck	S	S	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.30	769.6	30.34	770.6	53.6	12.0	89	SW	8	3.6	.....	7k	0	SW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.86	758.4	30.05	763.3	59	15.0	81	SE	10	4.5	.....	2ck	2ks	W	.....	0	0	Fair	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.33	745.0	30.01	762.2	61	16.1	99	S	11	4.9	.....	.....	10n	.....	SW	0.12	3.0	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.24	742.7	29.97	761.2	63.2	17.3	88	Calm	.....	.....	0	0?	0?	.....	.....	0	0	Cloudy?	J. F. Jeffers, B. A.
Port Dover, Ontario	29.43	747.5	30.11	764.8	62	16.7	94	SW	6	2.7	.....	10ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.22	767.6	30.27	768.8	60.5	15.8	.....	S	6	2.7	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.09	764.3	66	18.9	77	S	12	5.4	.....	.....	8ks	.....	W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.74	755.4	30.05	763.3	57	13.9	81	Calm	.....	.....	.....	.....	10n	.....	.....	0	0	Cloudy	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.50	749.3	29.95	760.7	59	15.0	97	Calm	0	0	.....	10cs	0	W	.....	0.08	2.0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.21	767.3	30.26	768.6	53	11.7	89	SW	1	0.4	.....	2k	2ks	W	.....	0	0	Fair	Dr. Gove.
St. John, N. B	30.12	765.0	30.28	769.1	55	12.8	87	S	12	5.4	.....	.....	10ks	.....	.....	0	0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.31	744.5	30.00	762.0	64	17.8	89	S	9	4.0	.....	5k	5s	W	.....	0.08	2.0	Clearing	K. Stewart.
Stayner, Ontario	29.27	743.4	30.03	762.7	63	17.2	88	W	5	2.2	.....	8ck	0	W	.....	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28 81	731.8	30.07	763.8	58.9	14.9	90	SW	7	3.1	.....	4cs	0	Calm	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	30.31	769.9	30.34	770.6	54	12.2	89	Calm	0	0	.....	.....	8ks	.....	S	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.70	754.4	30.08	764.0	63	17.2	88	Calm	0	0	.....	5ck	5n	W	SW	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	52.0	11.1	66	SE	.....	.....	.....	0	0	.....	.....	0	0	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'per 0–10	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.20	767.1	57	13.9	81	S	4	1.8	.....	2ck	Haze	Calm	.....	0	0	Fair	
Alpena, Michigan	29.31	744.5	29.93	760.2	63	17.2	88	W	6	2.7	.....	.....	10s	.....	W	0.18	4.6	Cloudy	
Atlantic City, New Jersey	30.26	768.6	30.28	769.1	61	16.1	82	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	
Augusta, Georgia	30.10	764.5	30.28	769.1	65	18.3	84	N	2	0.9	.....	0	2ks;hz	.....	NE	0	0	Fair	
Baltimore, Maryland	30.23	767.8	30.28	769.1	59	15.0	88	SE	1	0.4	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.26	768.6	30.28	769.1	60	15.6	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	28.18	715.8	30.04	763.0	43	6.1	75	W	2	0.9	.....	2cs	Haze	W	.....	0	0	Hazy	
Boerne, Texas	28.63	727.2	.....	.....	64	17.8	68	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.19	688.3	30.06	763.5	45	7.2	60	SE	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
Boston, Massachusetts	30.12	765.0	30.27	768.8	60	15.6	71	SW	5	2.2	.....	2cs	Haze	Calm	SW	0	0	Hazy	
Brackettville, Texas	28.94	735.1	29.95	760.7	66	18.9	84	E	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.92	734.6	29.94	760.5	39	3.9	100	W	7	3.1	.....	2c	0	W	.....	0	0	Fair	
Brownsville, Texas	30.01	762.2	30.08	764.0	70	21.1	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Buffalo, New York	29.41	747.0	30.09	764.3	65	18.3	63	S	10	4.5	.....	5c	1s	W	Calm	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	77	25.0	42	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.90	759.4	30.16	766.1	58	14.4	75	S	14	6.3	.....	5k	0	NW	.....	0	0	Fair	
Cairo, Illinois	29.75	755.6	30.14	765.5	64	17.8	78	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	48	8.9	72	N	.....	.....	1	2k	0	NE	.....	0	0	Fair	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	65	18.3	26	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.71	678.4	30.20	767.1	66	18.9	50	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.38	695.4	29.95	760.7	38	3.3	90	NE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cape Hatteras, N. Carolina	30.24	768.1	30.25	768.3	72	22.2	67	NE	16	7.2	.....	0	Haze	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.22	767.6	30.24	768.1	69	20.6	75	NE	11	4.9	.....	0	5s	.....	NE	0	0	Fair	
Cape Lookout, N. Carolina	30.24	768.1	30.25	768.3	70	21.1	85	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.27	768.8	30.30	769.6	63	17.2	83	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.28	743.7	29.98	761.5	61	16.1	82	W	4	1.8	.....	2ck	0	SE	.....	0	0	Fair	
Charleston, South Carolina	30.22	767.6	30.29	769.4	69	20.6	85	NE	8	3.6	.....	2ck	0	W	.....	0	0	Fair	
Cheyenne, Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chicago, Illinois	29.31	744.5	29.98	761.5	63	17.2	67	SW	11	4.9	.....	5k	0	W	.....	0	0	Fair	
Cincinnati Ohio	29.53	750.0	30.18	766.6	58	14.4	82	SE	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.44	747.8	30.16	766.1	60	15.6	71	SE	7	3.1	.....	5c	0	W	.....	0	0	Fair	
Coleman City, Texas	28.29	718.6	29.94	760.5	59	15.0	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.34	745.2	30.17	766.3	58	14.4	81	S	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Concho, Texas	28.15	715.0	29.76	755.9	59	15.0	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.64	752.8	30.10	764.5	67	19.4	74	S	1	0.4	.....	0	5s	.....	S	0	0	Fair	
Davenport, Iowa	29.38	746.2	30.00	762.0	64	17.8	73	SW	8	3.6	.....	1cs	0	W	.....	0	0	Fair	
Decatur, Texas	28.94	735.1	30.09	764.3	64	17.8	78	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.31	744.5	30.10	764.5	63	17.2	78	S	3	1.3	.....	2k	0	S	.....	0	0	Fair	
Denver, Colorado	24.91	632.7	30.13	765.3	46	7.8	77	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.09	738.9	29.94	760.5	67	19.4	69	W	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Detroit, Michigan	29.40	746.7	30.06	763.5	60	15.6	77	SW	8	3.6	.....	5cs	0	W	.....	0	0	Fair	
Dodge City, Kansas	27.39	695.7	29.62	752.3	61	16.1	71	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.26	743.2	29.93	760.2	64	17.8	73	SW	6	2.7	.....	2ck	Haze	SW	Calm	0	0	Fair	
Duluth, Minnesota	29.22	742.2	29.89	759.2	52	11.1	79	SW	8	3.6	.....	0	0	.....	.....	0.05	1.3	Clear	
Eagle Pass, Texas	29.30	744.2	30.04	763.0	61	16.1	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.20	767.1	30.27	768.8	58	14.4	76	S	6	2.7	.....	5k	0	W	.....	0	0	Fair	
Edinburg, Texas	.....	.....	.....	.....	66	18.9	79	N	.....	.....	1	0	2s	.....	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	75	23.9	45	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.43	747.5	30.13	765.3	64	17.8	68	S	9	4.0	.....	2c	0	Calm	.....	0	0	Fair	
Escanaba, Michigan	29.28	743.7	29.93	760.2	56	13.3	81	W	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Florence, Arizona	28.37	720.6	29.97	761.2	63	17.2	52	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.80	751.8	57	13.9	57	NE	4	1.8	.....	5cs	0	SE	.....	0	0	Fair	
Fort Davis, Texas	25.23	640.8	30.19	766.8	65	18.3	52	W	1	0.4	.....	5k	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.56	750.8	30.08	764.0	65	18.3	68	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.91	734.3	30.18	766.6	57	13.9	75	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.83	706.9	29.71	754.6	63	17.2	78	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.86	733.0	29.97	761.2	54	12.2	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.33	719.6	29.87	758.7	65	18.3	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.03	762.7	30.07	763.8	79	26.1	91	E	9	4.0	.....	.....	10ks	.....	E	0	0	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.33	745.0	29.95	760.7	68	20.0	79	S	12	5.4	.....	2c	2s	W	W	0	0	Fair	
Indianapolis, Indiana	29.37	746 0	30.14	765.5	60	15.6	71	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.03	762.7	30.05	763.3	76	24 4	95	NE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Jacksboro, Texas	28.94	735.1	30.06	763.5	60	15.6	71	Calm	0	0	.....	0	2ks	.....	Calm	0	0	Fair	
Jacksonville, Florida	30.17	766.3	30.20	767.1	74	23.3	81	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.39	746.5	29.98	761.5	68	20.0	65	SW	9	4.0	.....	4k	0	SW	.....	0	0	Fair	
Key West, Florida	29.99	761.7	30.02	762.5	79	26.1	82	E	4	1.8	.....	.....	10ks	.....	E	0.46	11.7	Cloudy	
Kittyhawk, North Carolina	30.23	767.8	30.25	768.3	76	24.4	66	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.30	744.2	30.32	770.1	53	11.7	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
La Crosse, Wisconsin	29.22	742.2	29.93	760.2	58	14.4	100	N	4	1.8	.....	.....	Fog	.....	Calm	0.12	3.0	Foggy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	57	13.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.62	752.3	29.96	761.0	65	18.3	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.92	633.0	30.19	766.8	36	2.2	90	SW	1	0.4	.....	0	0	.....	.....	0.30	7.6	Clear	
Leavenworth, Kansas	29.16	740.7	29.98	761.5	62	16.7	72	S	6	2.7	.....	5ck	0	SW	.....	0	0	Fair	
Los Angeles, California	29.57	751.1	29.90	759.4	60	15.6	74	E	3	1.3	.....	5k	0	SE	.....	0	0	Fair	
Louisville, Kentucky	29.64	752.8	30.19	766.8	58	14.4	70	SE	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.60	751.8	30.23	769.4	58	14.4	81	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.21	741.9	29.90	759.4	55	12.8	81	SW	8	3.6	.....	5c	5s	SW	Calm	0.06	1.5	Cloudy	
Mason, Texas	28.42	721.9	30.16	766.1	58	14.4	81	SE	2	0.9	.....	2ck	0	SE	.....	0	0	Fair	
Memphis, Tennessee	29.89	759.2	30.21	767.3	60	15.6	70	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.22	742.2	29.92	760.0	67	19.4	69	SW	13	5.8	.....	8ck	0	S	.....	0	0	Cloudy	
Mobile, Alabama	30.16	766.1	30.20	767.1	72	22.2	76	S	4	1.8	.....	5k	0	E	.....	0	0	Fair	
Montgomery, Alabama	29.99	761.7	30.22	767.6	65	18.3	73	Calm	0	0	.....	5k	0	E	.....	0	0	Fair	
Morgantown, West Virginia	29.19	741.4	30.25	768.3	57	13.9	87	W	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	24.02	610.1	30.38	771.6	41	5.0	91	NW	23	10.3	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.73	755.1	30.26	768.6	60	15.6	77	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.17	766.3	30.29	769.4	58	14.4	88	SE	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
New London, Connecticut	30.25	768.3	30.30	769.6	61	16.1	77	Calm	0	0	.....	Haze	1s;hz	Calm	Calm	0	0	Light haze	
New Orleans, Louisiana	30.08	764.0	30.13	765.3	74	23.3	86	NE	9	4.0	.....	Haze	0	Calm	.....	0	0	Hazy	
Newport, Rhode Island	30.23	767.8	30.28	769.1	62	16.7	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.14	765.5	30.32	770 1	59	15.0	76	NW	3	1.3	.....	1c	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.24	768.1	30.29	769.4	68	20.0	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.14	689.3	29.89	754.1	51	10.6	93	Calm	0	0	.....	10k	0	W	.....	0	0	Cloudy	
Olympia, Washington Ter.	29.98	761.5	30.02	762.5	40	4.4	91	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.88	733.5	29.94	760.5	55	12.8	87	NW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.82	757.4	30.14	765.5	61	16.1	77	S	8	3.6	.....	5c	0	W	.....	0	0	Fair	
Pembina, Dakota	29.07	738.4	29.91	759.7	40	4.4	100	NW	5	2.2	.....	.....	10s	.....	W	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instru-m'tal error and tem-perature. Inches.	Barometer. Correcte for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.27	768 8	30.32	770.1	58	14.4	88	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.73	729.7	.....	.....	73	22.8	43	W	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.92	454.7	30.13	765.3	29	—1.7	56	SW	20	8.9	.....	5k	0	SW	.....	0	0	Fair	
Pioche, Nevada	23.95	608.3	29.72	754.9	56	13.3	29	S	16	7.2	.....	2c	2s	SW	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.41	747.0	30.23	767.8	54	12.2	93	SW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.38	746.2	30.02	762.5	64	17.8	73	SW	12	5.4	.....	8cs	Haze	W	.....	0.01	0.3	Fair	
Portland, Maine	30.19	766.8	30.24	768.1	56	13.3	81	SW	8	3.6	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	29.94	760.5	30.05	763.3	44	6.7	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Prescott, Arizona	24.77	629.2	30.13	765.3	44	6.7	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.32	744.7	30.14	765.5	62	16.7	77	SE	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.06	763.5	30.08	764 0	80	26.7	78	NE	11	4.9	.....	2cs	0	Calm	.....	0.04	1.0	Clear	
Red Bluff, California	29.53	750.0	29.88	758.9	59	15.0	82	W	1	0.4	.....	.....	10s	.....	Calm	0.05	1.3	Cloudy	
Rio Grande City, Texas	29.88	758.9	30.09	764.3	71	21.7	49	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.49	749.0	30.09	764.3	64	17.8	68	SW	12	5.4	.....	2c	5s	SW	SW	0	0	Fair	
Roseburg, Oregon	29.45	748.0	30.03	762.7	40	4.4	91	Calm	0	0	.....	Haze	Sm'e	.....	Calm	0	0	Smoky	
Sacramento, California	29.85	758.2	29.93	760.2	51	10 6	86	Calm	0	0	.....	0	Sme;fg	.....	Calm	0	0	Smoky	
St. Louis, Missouri	29.56	750.8	30.13	765.3	64	17.8	73	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.18	766.6	30.19	766.8	71	21.7	90	NE	8	3.6	.....	1ck	0	NE	.....	0	0	Clear	
St. Paul, Minnesota	29.10	739.1	29.91	759.7	54	12.2	86	W	3	1.3	.....	.....	10s	.....	NW	0	0	Cloudy	
Salt Lake City, Utah	25.56	649.2	29.89	759.2	57.0	13.9	36	S	3	1.3	.....	5k	0	W	.....	0	0	Fair	
San Antonio, Texas	29.37	746.0	29 94	760.5	65	18.3	78	NE	2	0.9	.....	2ck	0	Calm	.....	0	0	Clear	
San Diego, California	29.89	759.2	29.96	761.0	56	13.3	81	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.48	748.8	30.14	765.5	61	16.1	66	SW	10	4.5	.....	1cs	0	W	.....	0	0	Clear	
Sandy Hook, New Jersey	30.26	768.6	30.30	769.6	68	20.0	70	NW	5	2.2	.....	2c	0	N	.....	0	0	Clear	
San Francisco, California	29.87	758.7	29.93	760.2	55	12.8	87	W	7	3.1	.....	.....	10s	.....	W	Inap.	Inap.	Fair	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	52	11.1	41	E	4	1.8	.....	0	0	.....	.....	0	0	Cloudy	
Savannah, Georgia	30.16	766.1	30.25	768.3	70	21.1	85	N	4	1.8	.....	1c	Haze	Calm	Calm	0	0	Clear	
Shreveport, Louisiana	29.92	760.0	30.14	765.5	66	18.9	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.41	620.0	.....	.....	50	10.0	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.25	768.3	30.28	769.1	65	18.3	89	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.14	765.5	30.27	768.8	54	12.2	87	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Stockton, Texas	26.96	684.8	29.96	761.0	62	16.7	61	SE	16	7.2	.....	4ck	0	E	.....	0	0	Fair	
Thatcher's Island, Mass	30.22	767.6	30.28	769.1	60	15 6	88	SW	11	4.9	.....	1c	0	Calm	.....	0	0	Clear	
Toledo, Ohio,	29.42	747.3	30.09	764.3	63	17.2	67	S	8	3.6	.....	5ck	0	NW	.....	0	0	Fair	
Tucson, Arizona	27.34	694.4	29.89	759.2	64	17.8	68	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.20	767.1	30.23	767.8	73	22.8	76	NE	16	7.2	.....	0	2ks	.....	Calm	0	0	Fair	
Umatilla, Oregon	29.69	754.1	.....	.....	38	3.3	54	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	100	E	.....	.....	1	.....	10 1	.....	SE	0.16	4.1	Raining	
Uvalde, Texas	29.17	740.9	29.98	761.5	61	16.1	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.34	618.2	29.82	757.4	40	4.4	56	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Visalia, California	29.59	751.6	29.96	761.0	53	11.7	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.19	766.8	30.30	769.6	61	16.1	82	S	1	0.4	.....	0	Fog	.....	S	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	55	12.8	68	N	.....	.....	1	0	0	.....	.....	6	0	Clear	
Wilmington, N. Carolina	30.19	766.8	30.26	768.6	64	17.8	83	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.53	648.4	29.89	759.2	42	5.6	91	S	10	4.5	.....	0	8ks	.....	S;E	0.24	6.1	Cloudy	
Wood's Holl, Mass	30.23	767.8	30.29	769.4	62	16.7	77	N	1	0.4	.....	Haze	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.76	730.7	30.05	763.3	48	8 9	85	N	1	0.4	.....	5c	0	W	.....	0	0	Fair	
Yuma, Arizona	29 64	752.8	29.80	756.9	68	20.0	50	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.43	747.5	29.48	748.8	35.5	1.9	100	SW	16	7.2	.....	.....	10n	.....	SW	0.40	10.2	Raining	J. Fortescue, W. Wood.
Havana, Cuba. W. I	29.96	761.0	29.98	761.5	82	27.8	87	E	2.4	1.1	.....	4cs	4n	Calm	NW	0.25	6.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.94	760.5	29.96	761.0	74	23.3	86	Calm	0	0	.....	0	0	.....	.....	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	87	Calm	0	0	.....	4c	4ks	N	.....	Inap	Inap.	Hazy	G. O. Gellich.
Kingston, Jamaica, W. I	30.11	764.8	30.12	765.0	80	26.7	91	Calm	0	0	.....	5c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.87	758.7	29.95	760.7	84	28.9	.....	NE	6.7	3.0	.....	.....	.....	.....	.....	0	0	Clear	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.99	761.7	29.99	761.7	85	29.4	68	SE	2	0.9	.....	3c	4k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	69.0	20.6	81	Calm	0	0	.....	3cs	1ks	.....	.....	0.03	0.8	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333(?)ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?)m., Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4(?) m.; Concho, 1,759 (?) ft., or 533.4 (?)m.; Decatur, 1,160 ft.,(?) or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 feet, or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m. Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 ft., (?) or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m., La Mesilla, (?); Lead City, (?) Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.8 ft., or 313.3 m.; Medellin, 4,870 ft., or 1,486.2 m.; Mt. Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft.,or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.; Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4, m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.30	769.6	76	24.4	76	24.4	82	NE	6	2.7	.....	.....	2	.....	SE	0	0	.....	.....	Fair.....	
Navy Yard, Portsmouth, N.H	30.22‡	767.6‡	.....	.....	55	12.8	87	SW	2	0.9	.....	.....	5?	.....	.....	0	0	.....	.....	Clear?.....	
Naval Hospital, Yokohama, Japan.....	30.02*	762.5*	75	23.9	73.5	23.1	98	E	.....	.....	3	.....	10n	....	E	0.95	24.1	.....	.....	Gloomy.....	
Adams. S. 47° 21′, W. 146° 27′.....	30.12	765.0	58	14.4	48	8.9	85	WSW	.....	.....	4–5	.....	10	.....	W	Blank	Blank	Long rough	SW	Cloudy.....	
Alliance, Villafranca, France	30.03‡	762.7‡	.....	.....	76	24.4	73	SE	.....	.....	1	.....	1	.....	Calm	.....	.....	Light	S	Hazy.....	
Ashuelot. Yokohama, Japan	30.12	765.0	75	23.9	73	22.8	100	ENE	.....	.....	4	.....	10	.....	E	.....	.....	Smooth	.....	Overcast.....	
Alaska. S. 41° 09′, W. 74° 39′..	29.84	757.9	54	12.2	50	10.0	79	WNW	.....	.....	3	.....	8	.....	SE	0.52	13.2	Rough	NW	Squally.....	
Colorado. New York, N. Y.....	30.31‡	769.9‡	.....	.....	62	16.7	77	NNW	3	1.3	.....	.....	2	.....	N	0	0	.....	.....	Hazy...	
Constitution, Havre, France.....	30.16‡	766.1‡	.....	.....	64	17.8	94	WSW	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Despatch, Volo, Turkey.....	29.82‡	757.4‡	.....	.....	79	26.1	47	NNE	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.....	30.35	770.9	.....	.....	67	19.4	89	NW	1.2	0.5	.....	.....	2	.....	NW	0	0	.....	.....	Clear.....	
Gettysburg Off Villafranca, France..	29.97‡	761.2‡	69	20.6	95	35.0	97	E	.....	.....	2	.....	0	.....	.....	0	0	Light	E	Clear.....	
Guard. Bahia, Brazil.....	30.24	768.1	.....	.....	77	25.0	77	SE	.....	.....	4	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Hartford, Rio de Janeiro, Brazil ...	30.07	763.8	78	25.6	73	22.8	81	NNW	3.6	1.6	.....	.....	10	.....	N	0.38	9.7	.....	.....	Overcast.....	
Marion, Naples, Italy.....	30.02	762.5	.....	.....	80	26.7	70	WSW	.....	.....	2	....	0	.....	.....	0	0	.....	.....	Clear.....	
Michigan, Erie, Pa.....	30.01†	762.2†	75	23.9	61	16.1	80	SSW	.....	.....	3	.....	2	.....	SSW	.....	.....	.....	.....	Fair.....	
Monocacy. Yokohama, Japan	30.05‡	763.3‡	.....	.....	77	25.0	91	SSE	.....	.....	1–2	.....	10	.....	SSE	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.....	30.43†	772.9†	.....	.....	73	22.8	76	NE	16	7.2	.....	.....	2	.....	SW	.....	.....	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	62	16.7	88	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.35	770.9	58	14.4	58	14.4	100	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.	
Palos, Tientsin, China.....	30.08	764.0	77	25.0	73	22.8	81	SSE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. New York, N. Y..... ...	30.34	770.6	63	17.2	60	15.6	82	NNW	.....	.....	0–1	.....	2	.....	.....	.....	.....	.....	.....	Fair.....	
Powhatan, New York, N. Y.....	30.31‡	769.9‡	.....	.....	62	16.7	77	WNW	2.4	1.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	29.82	757.4	85	29.4	83	28.3	75	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	30.00	762.0	73	22.8	73	22.8	95	NE	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.23‡	767.8‡	.....	.....	67	19.4	74	SW	.....	.....	0–1	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, League Island, Pa	30.04*	763.0*	.....	.....	59	15.0	88	NE	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Hazy.....	
St. Louis, League Island, Pa.....	30.19	766.8	65	18.3	60	15.6	82	NE	1	0.4	.....	.....	2	.....	Calm	0	0	.....	.....	Foggy.....	
Supply, Havre, France.....	30.25	767.8	65	18.3	64	17.8	78	W	.....	.....	4–5	.....	10	.....	.....	.....	.....	.....	.....	Squally.....	
Swatara, Boston, Mass.....	30.26‡	768.6‡	.....	.....	60	15.6	82	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	30.03‡	762.7‡	.....	.....	65	18.3	84	WSW	.....	.....	2	.....	10	.....	W	0	0	.....	.....	Overcast.....	
Tuscarora. La Paz, Mexico.....	29.68	753.9	77	25 0	78	25.6	69	SE	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia. Villafranca, France.....	30.04‡	763.0‡	.....	.....	76	24.4	77	SE	.....	.....	2	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.28‡	769.1‡	.....	.....	67	19.4	79	WSW	1	0.4	.....	.....	2	.....	Calm	0	0	.....	.....	Fair.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction** between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do **not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; **corrections applied** at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.			Force.	Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.			Amount.		Direction.						
											Upper.	Low'r.	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of ————, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama																			Capt. Cavarly.
S. S City of Peking, N. 36° 43′, W. 137° 04′		30.23†	767.8†	62	16.7	88	NE	18	8.0			9		NE				D. clouds	Capt. Dearborn.
S. S. City of Sydney																			Capt. Maury.
S. S. City of Tokio																			Capt. Searle.
S. S. Colima																			Capt. Whitebury.
S. S. Costa Rica																			Capt. Morse.
S. S. Dakota																			Capt. Connolly.
S. S. Georgia																			Capt. Austin.
S. S. Grenada																			Capt. A. Fuller.
S. S. Wilmington																			Capt. Ghest.
S. S. Zelandia																			

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 43° 35′ W. 51° 13′		30.48*	774.2*	60	15.6	94	ENE			5		8k		ENE		High	NE	Cloudy	Capt. W. H. Thompson.
S. S. Celtic																			Capt. R. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic, N. 34° 04′, E. 136° 32′		29.89*	759.2*	79	26.1	86	E			5		ks		E		Mod'ate	E	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.84†	757.9†				NE			4		k			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 43′, W. 11° 2′		30.04	763.0	64	17.8	94	SW			5		10		W	3 hours	5	NW; WSW	Foggy	Capt Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois.																			Captain Shackelford.
S. S. Indiana, N. 43° 34', W. 44° 54'		30.37*	771.4*	63	17.2	94	NE			3		7		NE	0	Mod'ate	NE	Cloudy	Captain Sargent.
S. S. Ohio, N. 49° 58', W. 40° 42'		30.35	770.9	59	15.0	76	NW			3		5?		NW	Small	Light	NW	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 31° 35', W. 66° 50'		29.99	761.7	84	28.9	75	NNW	8	3.6			2k		N	0	Heavy	SE	Clear	Capt. James Jorgensen.
Schooner Florence, (N. 57° 10', W. 57° 27')?		30.02*	762.5*	44.0	6.7		SW			2		10s			0			Misty	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 18, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
0:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	29.97	761.3	70.2	21.2	84	NE	.....	.....	3	.....	1	.....	.....	0	0	Very fair.....	Dr. Ollive.
Nemours	.....	.....	30.02	762.5	79.7	26.5	78	NNW	.....	.....	3	.....	3	.....	.....	0	0	Fair.....	Kesxuche.
Algiers	.....	.....	29.98	761.5	80.2	26.8	73	NNE	.....	.....	3	.....	1	.....	.....	0	0	Very fair. ...	Tourillere.
La Calle	.....	.....	30.03	762.8	84.2	29.0	64	NNE	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair .	Foufrede.
Tunis	.....	.....	30.03	762.7	80.4	26.9	65	W	.....	.....	3	.....	0	.....	.....	0	0	Clear.....	Jacques.
Sfax	.....	.....	30.11	764.7	80.6	27.0	.....	NNW	.....	.....	6	.....	2	.....	.....	0	0	Fair.....	Gau.
Saida	.....	.....	30.02	762.6	86.7	30.4	24	W	.....	.....	1	.....	1	.....	.....	0	0	Very fair....	Herbin.
Tebessa	.....	.....	30.02	762.6	79.3	26.3	33	N	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Watrin.
Geriville	.....	.....	30.04	763 0	81.0	27.2	76	SE	.....	.....	4	.....	1	.....	.....	0	0	Very fair....	Brugnlaux.
Laghouat	.....	.....	30.08	764.0	86.4	30.2	34	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.....	Bertrand.
Biskra	.....	.....	30.04	763.1	91.9	33.3	27	SE	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.54	750.2	30.07	763.8	68.7	20.4	55	SW.	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.19	741.3	29.93	760.2	70.5	21.4	65	S	.....	.....	1	.....	7	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.13	740.0	29.99	761.8	64.2	17.9	56	SE	.....	.....	3	.....	0	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.78	731.0	30.00	761.9	66.0	18.9	73	S	.....	.....	3	.....	4	.....	.....	0	0	.....	Andreas Rosnini.
Hermannstadt	28.58	725.9	30.01	763.1	61.3	16.3	49	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.63	727.1	29.93	760.3	65.5	18.6	57	NE	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	28.99	736.3	29.95	760.8	62.2	16.8	67	NW	.....	.....	2	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.93	760.2	30.04	763.0	72.7	22 0	69	WNW	.....	.....	2	.....	2ks	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.03	752.5	30.08	764.1	65.8	18.8	54	S	.....	.....	2	.....	5	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.77	756.1	30.04	763.0	67.1	19.5	80	E	.....	.....	1	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.97	761.2	30.07	763.8	72.1	22.3	69	W	.....	.....	1	.....	2	.....	.....	0	0	Almost clear	P. Busin.
Vienna	29.25	743.0	29.94	760.4	75.9	24.4	38	S	.....	.....	1	.....	0	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
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NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Passau.
Brussels	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Pierrot.
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NOTE—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.22	742.2	29.32	744.7	57.7	14.3	.....	SW	21	9.4	.....	.....	2	.....	.....	0	0	Blue sky	W. Boswell.
Ardrossan	29.43	747.5	29.45	748.0	52	11.1	.....	WNW	.....	.....	5	.....	7	.....	.....	.....	.....	Raining	George Carrick.
Armagh, Observatory	.....	.....	29.60	751.8	50.5	10.1	.....	SW	15	6.7	.....	.....	7	.....	.....	.....	.....	Squally	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.62	752.3	55.1	13.1	.....	W	31	13.9	.....	.....	8	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.20	741.7	29.60	751.8	56.5	13.6	.....	W	.....	.....	5	.....	5	.....	.....	0.31	7.9	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.98	761.5	30.01	762.2	83	28.3	.....	SE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.65	753.1	57.0	13.9	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.68	753.9	59.0	15.0	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.55	750.6	29.67	753.6	62.2	16.8	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	Showery	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.43	722.1	29.89	759.2	56.0	13.3	.....	W	.....	.....	4	.....	4	.....	.....	.....	.....	Squally	Alexander Watt.
Donaghadee	29.51	749.5	29.54	750.3	55	12.8	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	J. Mac Gowan.
Dover	29.65	753.1	29.67	753.6	62	16.7	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling	J. Costello.
Eccles, (near Manchester)	.....	.....	29.61	752.1	57.7	14.3	.....	W	6.4	2.9	.....	.....	5	.....	.....	.....	.....	D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.65	753.1	29.88	758.9	59.5	15.3	.....	WNW	.....	.....	4	.....	3	.....	.....	.....	.....	D. clouds	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G.Salmon, A.H. C.
Free Town, (Sierra Leone)	29.70	754.4	29.94	760.5	74.5	23.6	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	Raining	
Galway, Queen's College	.....	.....	29.68	753.9	51	10.6	.....	W	.....	.....	5	.....	9	.....	.....	.....	.....	Showery	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	29.99	761.7	.....	.....	.....	E	.....	.....	4	.....	2	.....	.....	.....	.....	Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.22	742.2	29.43	747.5	49.7	9.8	.....	WSW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds	D. G. Maclean.
Great Yarmouth	29.61	752.1	29.62	752.3	56	13.3	.....	WNW	.....	.....	3	.....	6	.....	.....	.....	.....	Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.53	750.0	29.70	754.6	59.5	15.3	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.60	751.8	29.81	757.2	59.5	15.3	.....	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.97	761.2	63	17.2	.....	N	.....	.....	4	.....	2ck	.....	.....	0.24	6.1	Fine	M. P. Moyle.
Holyhead	29.61	752.1	29.67	753.6	56	13.3	.....	W	.....	.....	5	.....	5	.....	.....	.....	.....	Blue sky	John Tilston.
Jersey	29.55	750.6	29.84	757.9	59.8	15.4	.....	WNW	.....	.....	5	.....	10	.....	.....	.....	.....	Raining	J. Fisher.
Kew, Observatory	29.66	753.4	29.70	754.4	60.0	15.6	.....	WNW	9	4.0	.....	.....	10	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.66	753.4	29.69	754.1	54	12.2	.....	W	.....	.....	6	.....	6	.....	.....	.....	.....	Squally	George Mitchell.
Leicester, Museum	.....	.....	29.65	753.1	57.2	14.0	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	80	26.7	.....	N	.....	.....	1	.....	2c	.....	.....	.....	.....	D. clouds	Sergt. Beckett.
Nairn	29.22	742.2	29.59	744.0	56	13.3	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	½ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.06	763.5	86.5	26.9	.....	NE	.....	.....	3	.....	10	.....	.....	Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.46	748.3	29.65	753.1	62.0	16.7	.....	WSW	.....	.....	4	.....	7c;k;d	.....	ssw;w	0.170	4.32	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.15	740.4	29.66	753.4	58.1	14.5	.....	W	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.70	754.4	56	13.3	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	H.E. Bellamy.
Plymouth	29.75	755.6	29.83	757.7	59.7	15.4	.....	NW	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds	John Merrifield.
Roche's Point	29.77	756.1	29.82	757.4	56	13.3	.....	WNW	.....	.....	6	.....	8	.....	.....	.....	.....	Squally	W. Kennedy.
Saint Ann's Head	29.62	752.3	29.78	756.4	57	13.9	.....	WNW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.	.....	.....	29.13	739.9	48.1	8.9	.....	W	40	17.9	.....	.....	10	.....	.....	.....	.....	Showery	Rev.C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.85	758.2	62.8	17.1	.....	N	.....	.....	2	.....	10	.....	.....	Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.36	745.7	29.63	752.6	58.6	14.8	.....	SW	.....	.....	3	.....	6	.....	.....	0.09	2.3	D. clouds	W. F. Cooper.
Silloth, Rectory	29.46	748.3	29.49	749.0	55.4	13.0	79	NW	.....	.....	6	.....	5	.....	.....	0.085	2.16	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.20	741.7	29.60	751.8	55.4	13.0	.....	SW	.....	.....	5	.....	8	.....	.....	.....	.....	Squally	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	29.51	749.5	29.72	754.9	59.9	15.5	.....	W	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Rev.C.H.Griffith, F.M.S.
Thurso	.....	.....	29.20	741.7	53	11.7	.....	W	.....	.....	6	.....	7	.....	.....	.....	.....	Showery	John Trotter.
Truro, Royal Institution	.....	.....	29.89	759.2	63	17.2	.....	W	.....	.....	7	.....	4	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	29.90	759.4	29.92	760.0	53.6	12.0	.....	WNW	27	12.1	.....	.....	8	.....	.....	Blank	Blank	Squally	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	54.0	12.2	73	S	.....	.....	2	.....	4k	.....	.....	0	0	.....	FrancisAbbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.93	760.2	30.12	765.1	73.8	23.2	69	E	18.0	8.0	.....	2	6	.....	ESE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.66	753.3	29.76	755.9	58.2	14.6	68	NE	10	4.5	.....	.....	0	.....	.....	0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—																	
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 23° 25', W. 30° 30'	.....	.....	30.13	765.3	83	28.3	.....	.....	.....	.....	1	.....	5	.....	.....	Smooth	.....	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. H. Smith, R. N.
Schooner Traveller, N. 40° 50', W 58° 50'	.....	.....	30.03	762.7	75	23.9	.....	S	.....	.....	3	.....	2	.....	.....	4	NE;SE	Blue sky	Capt. Alex. Simpson. [R
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.
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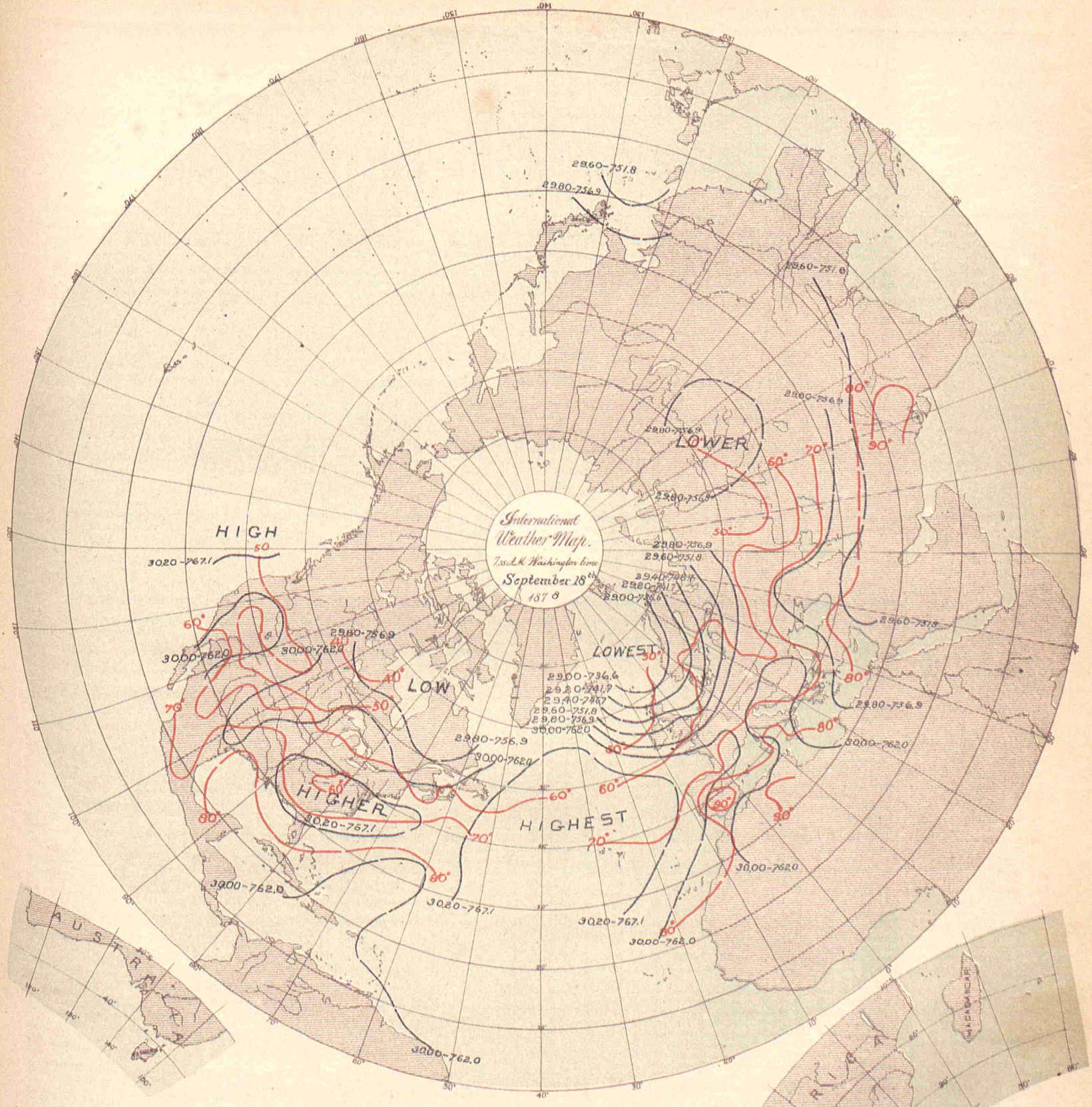
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.25	666.7			70.7	21.5	92	SE			1	1c;ck	3s	E		Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.43	747.6	29.48	748.8	59.9	15.5	96	WSW			4		10					Raining	
Fanöe	29.37	746.0	29.39	746.5	61.9	16.6	91	W			6		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.81	734.3	28.95	735.2	48.0	8.9	72	WNW			4		4						
Vestervig	29.12	739.7	29.29	744.0	57.2	14.0	94	SW			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.42	747.2	29.97	761.2	61.2	16.2	96	SW			1		10		NE	0	0	Covered	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.94	760.5	30.02	762.5	81.5	27.5	42	NNW			1		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.39	746.4	29.92	760.0	69.6	20.9	80	SW			1		8kn			0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.60	751.8	29.88	758.9	63.5	17.5	76	SW			4		10		WSW	0	0	Covered	Frere Eugene Marie, Director.
Besançon	29.15	740.3	30.02	762.5	65.3	18.5	57	WSW			4		1		W	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.57	751.1	30.12	765.0	62.6	17	80	S			2		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.81	757.2	30.06	763.4	61.5	16.4	85	NNW			3		9		NNW	0.010	0.25		The Staff.
Carcassonne, Normal School	29.64	752.8	30.04	763.0	79.5	26.4	34	W			2		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.37	746.1	29.93	760.3	62.4	16.9	58	SW			4		10		NE	NE	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.62	752.4	29.93	760.2	69.8	21.0	72	SW			4		2		W	W	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.64	727.5	30.08	764.0	75.9	24.4	36	NE			1		0				0	0	Clear	Alluard, Director.
Commercy, Normal School	29.10	739.2	29.97	761.1	65.1	18.4	71	W			3		2kn		W	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.95	735.3	30.00	764.3	80.6	27.0	32	S			3		2	SW		0	0	¼ covered	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	29.84	758.0	30.06	763.5	65.8	18.8	92	W			1		10		W	0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.64	752.9	29.95	760.6	64.4	18	65	SW			3		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.14	740.1	30.03	762.8	66.2	19	82	NW			1		5		NW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.13	765.3	30.17	766.2	66.2	19	76	Calm			0		0			0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	28.91	734.2	29.93	760.2	64.2	17.9	63	W			3		2ck		SW	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.89	759.3	30.11	764.8	78.4	25.8	63	N			1		0			0	0		Boyer, Director.
Privas, Normal School	29.00	736.7	30.01	762.3	82.4	28	39	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.21	640.2			56.1	13.4	42	W			2		0			0	0	Clear	Allnard, Director.
Rochefort, Naval Obs'y	30.02	762.5	30.05	763.3	69.8	21.0	65	SSW			3		2	SSW	SSW	0	0	¾ Covered	Lt. Decante, Director.
Rouen, Normal School	29.76	755.8	29.84	758.0	61.9	16.6	90	SSW			1		10		S	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			29.85	758.1	62.8	17.1	91	S			4		10		WNW			Raining	M. H. Herconet.
Saint Maur, (near Paris)	29.74	755.4	29.91	759.6	64.4	18.0	69	SW			2-3		10		WSW	0.157	4.0		E. Renou.
Tarbes, Normal School	29.13	739.9	30.19	766.8	64.4	18	80	W			2		5	SW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.92	760.0	29.95	760.7	82.8	28.2										0	0		L'Abbé Marchès.
Lyons			29.61	752.2	73.4	23.0	44						1			0	0		L. Jays.
Marseilles, Observatory			29.99	761.8	78.3	25.7	64	S			1-2		1			0	0	Slightly cl'dy	The Staff.
Mont-Louis	24.97	634.2	30.28	769.2	68.0	20.0	37	WSW			3		0			0	0		M. Cave.
Nice			30.05	763.2	73.8	23.2	81	S			1		1			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.63	752.5	29.90	759.5	63.9	17.7	71	WSW			4		10			0	0		Marié Davy, Director
Perpignan			30.02	762.6	76.3	24.6	50	SE	5.6	2.50			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.70	576.5			64.0	17.8		SW			2		1			0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.37	745.9	30.09	764.3	71.6	22.0	44	WSW			1		0			0	0		The Staff.
Tours	29.78	756.4	29.98	761.4	68.5	20.3	58	WSW			3		5		W	0	0		C. Marquet.
Versailles			29.91	759.8	63.7	17.6	62	NW			3		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.61	752.0	29.63	752.6	74.3	23.5	91	NNE	9.6	4.3			10kn			0.157	4.0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–12	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.02	737.2	29.87	758.6	66.2	19.0	63	SW	.....	.....	4	.....	7	WSW	....	0	0	.....	Prof. Dr. Hoh.
Berlin	29.59	751.6	29.76	755.8	68.7	20.4	62	SW	.....	.....	3	.....	2	.....	.....	0.016	0.4	Raining	Prof. Arndt.
Breslau	29.37	745.9	29.89	759.3	71.4	21.9	49	SW	.....	.....	3	.....	2	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.50	749.2	29.91	759.8	67.3	19.6	60	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	Albert Senz.
Cassel	29.21	742.0	29.82	757 3	69.4	20.8	64	SW	.....	.....	4	.....	4	SW	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.58	751.4	29.74	755 5	65.8	18.8	76	SW	.....	.....	5	.....	10	.....	.....	0.08	2.	Raining	Director Lose.
Emden	29.56	750.9	29.60	751.8	61.3	16.3	96	SW	.....	.....	7	.....	10	.....	.....	0.094	2.4	Lightning	Prof. Prestel.
Frankfort on the Main	29.51	749.6	29.87	758.6	69.4	20.8	.....	SSW	.....	.....	2	.....	4	.....	.....	Inap.	Inap.	.....	Physical Society.
Friedrichshafen	28.56	725.4	29.97	761.3	61.2	16.2	78	WSW	.....	.....	3	.....	1	W	.....	0.315	8.0	.....	M. Wilhelm.
Hamburg	29.54	750.3	29.61	752.1	60.8	16.0	98	SW	.....	.....	7	.....	10	.....	.....	0.079	2.0	Raining	Captain F. Hegemann.
Kiel	29.51	749.6	29.53	750.0	60.3	15.7	95	SW	.....	.....	4	.....	10	.....	.....	0.316	8.02	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.66	753.3	29.74	755 4	61.7	16.5	84	SW	.....	.....	6	.....	8	.....	.....	0.039	1.0	.....	Prof. E. Luther.
Köslin	.....	.....	29.68	753.8	63.5	17.5	.....	SW	.....	.....	4	.....	4	.....	.....	0.047	1.2	.....	H. Müller.
Leipsic, Observatory	29.43	747.5	29.84	757.8	70.5	21.4	61	SSW	.....	.....	3	.....	8	W	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	29.65	753.0	29.69	754.2	63.1	17.3	83	SW	.....	.....	6	.....	10s	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.74	755.4	29.76	755.8	63.0	17.2	81	SSW	.....	.....	4	.....	10	SW	.....	0	0	.....	A. Lothes.
Posen	29.60	751.8	29.88	758.9	65.5	18.6	70	S	.....	.....	6	.....	10	.....	.....	0.043	1.1	.....	Dr. Magener.
Strassburg (in Alsace)	29.42	747.2	29.95	760.7	69.1	20.6	60	SSE	.....	.....	3	.....	2	W	.....	0	0	.....	Astronomical Observatory.
Stuttgart	28.97	735.9	29.88	758.9	69.8	21.0	49	W	.....	.....	1	.....	3	W	.....	0.008	0.2	.....	Prof. Schoder.
Treves, (Trier)	29.33	744.9	29.85	758.1	69.4	20.8	55	SW	.....	.....	7	.....	7	.....	.....	0.216	5.48	.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.45	722.7	29.92	759.9	64.4	18.0	59	SW	3.6	1.6	.....	.....	5ck	SW	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	29.61	752.2	29.65	753.2	63.3	17.4	87	SSW	.....	.....	6	.....	10	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.55	750.6	29.93	760.3	73.0	22.8	.....	NE	.....	.....	3.5	.....	.....	....	.....	.....	.....	⅓ Clear	Dr. J. F. J. Schmidt.
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Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.45	748.0	29.50	749.3	86.7	30.4	80	W	26?	11.6?	.....	.....	9	.....	.....	0	0	D. clouds	
Deesa	28.98	736.1	29.44	747.8	92.0	33.3	61	NNE	.....	.....	.....	.....	10	NE	.....	0	0	D. clouds	
Bombay	29.53	749.9	29.56	750.9	78.8	26.0	93	W	29	13.0	.....	.....	10	.....	SW	1.11	28.2	Raining	
Poona	27.64	702.1	29.64	752.8	76.2	24.6	81	W	.....	.....	.....	.....	10	.....	W	0.14	3.6	Overcast	
Lahore	28.75	730.3	29.48	748.7	89.1	31.7	51	NE	1.7	0.8	.....	.....	5	.....	.....	0	0	D. clouds	
Belgaum	27.15	689.6	29.70	754.4	70.8	21.6	92	WSW	24	10.7	.....	.....	9	.....	WSW	0.94	23.9	Showery	
Roorkee	28.63	727.2	29.52	749.8	79.8	26.6	80	SW	2	0.9	.....	.....	5	.....	.....	0.04	1.0	Misty	
Agra	28.96	735.5	29.52	749.7	82.7	28.2	87	NE	.....	.....	.....	.....	10	.....	E	.....	.....	.....	
Nagpur	28.45	722.7	29.48	748.8	82.6	28.1	83	Calm	5.8	2.6	.....	.....	9	.....	N;E	0.05	1.3	Gloomy	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.18	741.2	29.49	749.0	81.1	27.3	94	NW	1.2	0.5	.....	.....	10	.....	SE	0.48	12.2	Thunder-storm	
Patna	29.32	744.7	29.50	749.2	87.6	30.9	78	E	1.2	0.5	.....	.....	2	E	E	0	0	.....	
Hazaribagh	27.53	699.2	29.50	749.4	81.6	27.6	79	ESE	8	3.6	.....	.....	2	.....	E	0.02	0.5	Thunder-storm	
Cuttack	29.45	748.1	29.53	750.2	86.6	30.3	74	N	1.3	0.6	.....	.....	5	.....	.....	0	0	D. clouds	
Calcutta (Alipore)	29.49	749.1	29.51	749.6	85.7	29.8	81	ENE	2	0.9	.....	.....	3	.....	.....	0	0	D. clouds	
Goalpara	29.12	739.6	29.50	749.3	83.5	28.6	83	SSW	2.3	1.0	.....	.....	7	.....	.....	0	0	D. clouds	
Chittagong	29.47	748.4	.....	.....	.....	.....	.....	Calm	0.9	0.4	.....	.....	10	.....	.....	0	0	Overcast	
Sibsagar	29.18	741.2	29.51	749.5	90.1	32.3	66	WNW	0.8	0.4	.....	.....	5	.....	.....	0	0	D. clouds	
Jubbulpore	28.16	715.4	29.51	749.5	82.2	27.9	78	S	6.3	2.8	.....	.....	5	.....	.....	0	0	D. clouds	
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.67	753.7	30.07	763.8	72.0	22.2	61	N	0.7	0.3	.....	.....	9	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760 6	30.05	763.3	74.5	23.6	64	Calm	0	0	.....	.....	7	NW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.85	758.2	30.04	762.9	74 8	23.8	62	S	0.7	0.3	.....	.....	5	W	.....	0	0	.....	Cont' Alm. Da Schio.
Bergamo	28.73	729.8	30.01	762.3	74.5	23.6	67	SW	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.52	749.8	30.03	762 7	73 0	22.8	79	S	.....	.....	2	.....	7	S	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.15	740.4	30.03	762.7	72.7	22.6	65	E	2.5	1.1	.....	.....	3	S	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.17	715 4	30.02	762.5	69.4	20.8	59	WNW	.....	.....	4	.....	1	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29 82	757.4	30.04	762.9	76.5	24.7	66	SW	.....	.....	2	.....	2	NE	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.85	758.2	30.02	762.4	78.1	25.6	54	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.72	755.0	30.03	762.7	77.2	25.1	51	NNE	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.75	755.6	30.00	761.9	81 1	27.3	31	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.92	760.0	30.00	762.1	77 4	25.2	67	SW	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.99	761.8	30.04	763.0	74.1	23.4	68	SE	.....	.....	.....	.....	0	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.50	724.0	30.02	762.4	69 1	20.6	69	SE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.84	757.9	30.01	762.2	81.3	27.4	54	W	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.81	757.1	30.00	762.0	80.4	26.9	36	SSE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.74	755.4	29.98	761.6	71.2	21 8	87	N	19.9	8.9	.....	.....	3	N	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.78	756.4	29.97	761.1	77.2	25.1	56	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.12	739.7	29.98	761.5	76 8	24.9	70	SW	11.2	5.0	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.78	756.3	30.02	762.5	75.9	24.4	66	NE	6.9	3.1	.....	.....	4	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.92	759.9	29.99	761.8	80 2	26.8	60	SE	2.5	1.1	.....	.....	5	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.50	749.2	30.05	763.3	76.1	21.5	51	NE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.56	750.8	29.75	755.6	78 7	25 9	64	ENE	3.9	1.8	.....	.....	0	.....	.....	0.105	2.67	Clear	
Tokei (Yeddo) Observatory	30.00	762.0	30.06	763.5	70.7	21.5	95	E	3 3	1.5	.....	.....	1ck	.....	.....	0.005	0.13	Fair	I. Arai, Director.
Tokei (Yeddo) University	29.96	761.0	30.05	763 3	71.8	22.1	99	NE	3	1.3	.....	.....	0	.....	.....	0.10	2.54	Fine	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.4	18.0	77	N	.....	.....	4	2cs	1k	E	E	0.103	2.6	Fair	P. Ceballos.
Guadalajara	25.15	638.7	30.10	764.4	61.7	16.5	77	.....	.....	.....	.....	0	9k	.....	SE	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Leal.
Mexico	24.50	622.5	30.07	763.0	60.6	15.9	88	SE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Central Observatory.
Pabellon, (Aguascalts)	23.20	589.2	30.22	767.5	55.4	13.0	90	Calm	0	0	.....	0	1s	.....	.....	0	0	.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	61.7	16 5	75	N	.....	.....	2	0	4k	.....	NE	0	0	Fair	M. Cházaro.
Tlacotalpam	23.40	594 3	30.06	763.5	52.9	11.6	87	N	.....	.....	.....	0	2cks	.....	Calm	0.37	9.32	Clear	Prof. R. Gonzalez.
San Luis Potosi	29.93	760.1	29.94	760.4	77	25	88	NW	.....	.....	3	1ck	5kn	SW	N	0.701	17.8	Misty	M. V. de Leon, C. E.
Vera-Cruz	24.33	617 3	30.27	768.9	62.0	16 7	32	E	3.1	0.4	.....	.....	10	.....	E	0	0	Covered	M, M. Cházaro.
Zacatecas	30.02	762.4	30.05	763.1	78.8	26.0	76	NW	2.4	1.1	.....	1c	2ks	.....	.....	0	0	Clear	G. Barroeta, M. D.
Puebla, (Catholic Institute)	.....	.....	.....	.....	56.3	13.5	77	NE	.....	.....	3	2	3	SW	NE	0	0	.....	Prof. J. Rossell.
Durango	23.32	592.4	30.08	764.1	51.8	11.0	89	N	7.2	3.2	.....	5	0	Calm	.....	0.350	8.90	Misty	J. A. Bonilla, M. E.
Colima	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. Spina, [M.M. D. D
San Juan E. Michapam	28.38	720 7	29.99	761.7	79.9	26.6	84	Calm	0	0	.....	5	3	E	E	0	0	Very cloudy	M. V. de Leon, C. E.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Banda, C. E.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.71	754.6	29.71	754.6	61 9	16 6	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.016	0.4	.....	
Groningen	29.53	750.0	29.58	751.4	60.6	15.9	.....	S	.....	.....	5	.....	.....	.....	.....	0.256	6.5	.....	
Helder	29.58	751.2	29.58	751 2	61.9	16 6	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.583	14.8	.....	
Hellevoetsluis	29.66	753.4	29.66	753.4	60.6	15.9	100	SSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.63	752.6	29.68	753.8	59.9	15.5	98	SSW	.....	.....	5	.....	10	.....	.....	0.80	20.4	Dull	H. v d Brink.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.05	737.8	29.10	739.2	55.0	12.8	68	SSW	25.	11.0	.....	.....	3	.....	.....	0.354	9.0	Raining	
Brönö	28.95	735.2	28.98	736.2	57.2	14.0	57	ENE	9	4	.....	.....	6	.....	.....	0	0	.....	
Christiania	28.94	735.1	29.08	738.6	61.5	16.4	87	SSW	20	9	.....	.....	9	.....	.....	0.142	3.6	.....	
Tromsö	28.90	734.1	28.95	735.2	50.7	10.4	76	SW	9	4	.....	.....	10	.....	.....	0.087	2.2	Light rain...	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.12	765.1	30.31	769.8	74.1	23.4	85	S	3.1	1.4	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.01	736.9	29.97	761.3	90.5	32.5	27	SSW	4.3	1.9	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.4	30.07	763.6	79.0	26.1	62	SW	5.6	2.5	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.70	754.4	30.05	763.2	77.5	25.3	33	N	21.0	9.4	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.24	768.1	30.31	769.8	82 4	28.0	55	SW	.....	.....	.....	.....	5	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell: Heig scale 0-9	Sea or swell: Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 11° 50′, E. 12° 08′	.....	.....	30.09	764.2	73.4	23.0	.....	W	.....	.....	2	.....	0	.....	.....	1	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	30.00	762.0	78.8	26.0	.....	WNW	.....	.....	3	.....	0	.....	.....	1	.....	Blue sky.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.97	761.1	85.1	29.5	.....	NE	.....	.....	4	.....	3	.....	NE	2	NE	D. clouds...	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.57	751.0	84.2	29.0	.....	NNW	.....	.....	2	.....	0	.....	.....	0	.....	Blue sky.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.88	759.0	65.7	18.7	68	WSW	13	6	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.41	746.9	29.82	757.4	57.4	14.1	90	SSW	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Dorpat	29.34	745.1	29.57	751.1	61.7	16.5	71	WSW	9	4	.....	.....	9ks;n	.....	.....	.....	.....	.. ..	Prof. Dr. Weihrauch.
St. Petersburg	29.47	748.4	29.48	748.8	55.6	13.1	93	SSW	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.27	743.4	29.88	759.0	63.0	17.2	46	NW	7	3	.....	.....	1c;ck	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.80	756.8	29.87	758.6	75.9	24.4	57	N	13	6	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.76	756.0	29.78	756.5	73.8	23.2	70	N	4	2	.....	.....	1	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.30	744.2	29.84	757.9	58.5	14.7	82	S	7	3	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.47	748.4	29.67	753.5	72.7	22.6	48	ESE	9	4	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.53	750.0	29.55	750.5	57.4	14.1	85	S	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.39	721.2	29.74	755.4	76.5	24.7	49	E	4	2	.....	.....	6k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.02	762.5	29.94	760.4	70.0	21.1	44	SE	7	3	.....	.....	2ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.49	746 7	29.85	758.3	65.8	18.8	62	S	2	1	.....	.....	8ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.65	753.0	29.91	759.6	65.7	18.7	60	SSW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.97	735.7	29.92	759.9	46.2	7.9	88	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining... ...	Meteorological Obs.
Nukuss	29.64	752.8	29.86	758.5	70.3	21.3	41	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.28	718.3	29.93	760 3	70.5	21.4	45	Calm	0	0	.....	.....	8	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.15	740.3	29.67	753.5	50.9	10.5	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.47	748.4	29.75	755.6	52.3	11.3	91	E	4	2	.....	.....	10	.....	.....	.....	.....	Raining.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.71	754.5	29.85	758.1	69.8	21.0	95	Calm	0	0	.....	.....	3cs?	.....	.....	.....	.....	Thunder-storm?..	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.7	30.01	762.3	79.9	26.6	64	SW	1.7	0.78	.....	.....	4k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.05	763.3	30.11	764.7	77.7	25.4	55	NW	2.7	1.19	.....	2	.....	NW	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.6	.....	.....	80.6	27.0	55	NE	3.0	1.34	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.83	706.8	29.91	759.6	91.0	32.8	27	SW	5.2	2.33	.....	1	0	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.86	758.4	30.00	762.0	89.4	31.9	51	NNE	4.9	2.17	.....	1	3	E	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.21	742.0	30.09	764.2	70.7	21.5	73	NE	6.7	3.00	.....	3	4	.....	.....	0	0	Cloudy.	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.00	762.1	30.07	763.7	78.8	26.1	85	ENE	1.1	0.5	.....	2ck	1ks	WNW	.....	0.012	0.3	Fair.....	Benito Vines, S. J
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.6	30.00	762 0	82.4	28.0	63	WSW	9.6	4.3	.....	2	4	NE	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	81.7	27.6	88	SW	0	0	.....	6s	3k	S	S	0.001	0.25	Cloudy.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount.		Clouds. Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour	Meters per second.	0–10.	Up'er 0–10.	Low'r 0–10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
Haparanda	29.20	741.6	29.24	742.6	53.6	12.0	.....	S	.....	.....	4	.....	5	.....	.....	0.315	8.0	.....	
Umea	29.17	740.8	29.22	742.1	54.7	12.6	61	SW	.....	.....	4	.....	8	.....	.....	0.217	5.5	.....	
Hernosand	29.13	739.9	29.18	741.2	52.2	11.2	75	S	.....	.....	4	.....	8	.....	.....	0.024	0.6	.....	
Stockholm	29.14	740.2	29.32	744.7	60.4	15.8	88	SW	.....	.....	2	.....	10	.....	.....	0.016	0.4	Raining	
Wisby	29.37	746.0	29.43	747.5	62.2	16.8	90	WSW	.....	.....	7	.....	10	.....	.....	0.091	2.3	.....	
Sub-Series.																			
Upsala	29.19	741.5	29.27	743.4	58.3	14.6	95	S	12.8	5.7	.....	.....	10	.....	SW	0.313	7.94	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.59	726.2	29.97	761.1	72.9	22.7	56	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.
Zurich	28.38	720.9	29.98	761.4	66.6	19.2	70	SE	.....	.....	1	.....	1	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.8 mm.; Thermometer, +4.9 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.90	759.5	62.8	17.1	85	NNW	20	9.0	.....	10	.....	N	0.039	1.0	.....	The Observatory.
Valona	.....	.....	29.98	761.6	76.6	24.8	.....	NW	.....	.....	2	0	.....	.....	0	0	Clear.	.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.54	750.3	29.66	753.3	84.6	28.9	57	SW	.....	.....	3	.....	10n	.....	SW	0.09	2.3	Overcast	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.72	754.9	30.02	762.5	63	17.2	.....	SW	1	0.4	.....	.....	10s	.....	N	0.12	3.0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.86	758.4	29.92	760.0	58	14.4	89	S	11	4.9	.....	.....	10s	.....	S	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.96	761.0	30.00	762.0	60	15.6	76	SW	8	3.6	.....	8cs	0	Calm	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.98	761.5	62.7	17.1	88	NW	.....	.....	1	.....	10s	.....	.....	0.358	9.09	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.68	753.9	29.84	757.9	58.5	14.7	97	W	.....	.....	1	.....	.....	.....	.....	.....	.....	Drizzling	H. A. Johnson.
Esquimault, B. C	29.95	760.7	30.00	762.0	43.3	6.3	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.80	756.9	29.82	757.4	52	11.1	90	SW	18	8.0	.....	5k	5s	W	W	0.04	1.0	Threatening	J. McWilliams.
Fredericton, N. B	29.94	760.5	30.00	762.0	59.8	15.4	88	W	2	0.9	.....	.....	10s	.....	SW	0	0	Overcast	Prof. Harrison.
*Fort Garry, Manitoba	29.15	740.4	29.98	761.5	42	5.6	100	E	9	4.0	.....	5k	5n	E	E	0.04	1.02	Light rain	James Stewart.
Granton, Ontario	29.00	736.6	30.09	764.3	57	13.9	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	29.92	760.0	30.05	763.3	57	13.9	93	S	1	0.4	.....	0	2ks	.....	S	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.78	756.4	30.14	765.5	64.2	17.9	81	SW	.....	.....	2	2c	0	W	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	30.15	765.8	30.17	766.3	57	13.9	69	SW	.....	.....	1	.....	10	.....	.....	0	0	Fair	E. Weedon.
*Kingston, Ontario	29.72	754.9	30.04	763.0	66	18.9	87	W	5	2.2	.....	0	2ks	.....	Calm	0.04	1.0	Overcast	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.76	755.9	29.96	761.0	64	17.8	94	E	12	5.4	.....	5k	5s	.....	NW	0.27	6.9	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.40	746.7	30.09	764.3	57	13.9	97	W	3	1.3	.....	0	0	.....	.....	0.81	20.6	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.33	745.0	30.06	763.5	60.2	15.7	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.09	764.3	63	17.2	100	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.07	763.8	61.7	16.5	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.46	748.3	30.09	764.3	62	16.7	90	W	3	1.3	.....	0	0	.....	.....	0.03	0.8	Clear	M. Payne.
*Quebec, Quebec	29.59	751.6	29.90	759.4	59	15.0	100	SW	.....	.....	.....	.....	10n	.....	SW	0.49	12.4	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.60	751.8	30.05	763.3	54	12.2	90	NW	10	4.5	.....	.....	5s	.....	NW	0.72	18.3	Fair	W. H. McIntyre.
St. Andrews, N. B	29.94	760.5	29.99	761.7	58	14.4	93	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B	29.88	758.9	30.04	763 0	55	12.8	97	SW	12	5.4	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.39	746.5	30.10	764.5	55	12.8	92	N	3	1.3	.....	0	Haze	.....	.....	0	0	Hazy	K. Stewart.
Stayner, Ontario	29.31	744.5	30.08	764 0	58	14.4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.81	731.8	30.07	763 8	56.9	13.8	93	W	4	1.8	.....	.....	0	.....	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	30.03	762.7	30.06	763.5	64	17.8	87	SW	9	4.0	.....	5c	5ks	SW	SW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.71	754.6	30.09	764.3	60	15.6	77	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	58.0	14.4	82	SE	.....	.....	.....	5k	5s	.....	.....	Inap.	Inap.	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From —	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From —	Rain-fall, or melted snow in the past 24 hours. Inches.	Rain-fall, or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.84	757.9	30.06	763.5	62	16.7	83	SE	8	3.6	.....	1c	Haze	W	.....	0	0	Clear	
Alpena, Michigan	29.44	747.8	30.08	764.0	52	11.1	93	W	2	0.9	.....	0	Fog	.....	.....	0.30	7.6	Clear	
Atlantic City, New Jersey	30.17	766.3	30.19	766.8	67	19.4	90	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.12	765.0	30.30	769.6	63	17.2	89	NW	1	0.4	.....	0	Fog	.....	Calm	0	0	Fair	
Baltimore, Maryland	30.15	765.8	30.20	767.1	64	17.8	78	W	5	2.2	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	67	19.4	84	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	28.04	712.2	29.89	759.2	44	6.7	76	E	2	0.9	.....	5cs	Haze	W	.....	0	0	Hazy	
Boerne, Texas	28.66	728.0	.....	.....	72	22.2	90	SE	6	2.7	.....	.....	10ks	.....	S	0	0	Cloudy	
Boise City, Idaho	27.04	686.8	30.00	762.0	55	12.8	55	NE	1	0.4	.....	5k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	29.94	760.5	30.09	764.3	66	18.9	79	W	11	4.9	.....	0	Haze	.....	Calm	0	0	Hazy	
Brackettville, Texas	28.96	735.6	29.96	761.0	73	22.8	85	S	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.91	734.3	29.91	759.7	42	5.6	100	SE	6	2.7	.....	.....	10ks	.....	W	0	0	Cloudy	
Brownsville, Texas	30.01	762.2	30.07	763.8	76	24.4	95	SE	2	0.9	.....	5k	0	SE	.....	0	0	Fair	
Buffalo, New York	29.38	746.2	30.05	763.3	68	20.0	84	SW	11	4.9	.....	8k	0	W	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	78	25.6	39	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.77	756.1	30.01	762.5	64	17.8	78	S	10	4.5	.....	0	8s	.....	W	0	0	Cloudy	
Cairo, Illinois	29.78	756.4	30.16	766.1	67	19.4	79	S	4	1.8	.....	5ck	0	W	.....	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	52	11.1	66	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	63	17.2	33	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.68	677.7	30.17	766.3	59	15.0	54	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camyo, California	27.33	694.2	29.90	759.4	36	2.2	90	SW	4	1.8	.....	.....	Fog	.....	SW	0	0	Foggy	
Cape Hatteras, N. Carolina	30.24	768.1	30.25	768.3	69	20.6	75	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.20	767.1	30.22	767.6	62	16.7	83	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.26	768.6	30.27	768.8	70	21.1	80	NE	6	2.7	.....	0	Haze	.....	NE	0	0	Hazy	
Cape May, New Jersey	30.18	766.6	30.21	767.3	68	20.0	84	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.30	744.2	29.97	761.2	78	25.6	82	SE	4	1.8	.....	.....	10ks	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.25	768.3	30.31	769.9	67	19.4	84	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	24.07	611.4	30.01	762.2	39	3.9	82	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.36	745.7	30.03	762.7	64	17.8	78	SW	4	1.8	.....	0	Fog	.....	.....	0	0	Clear	
Cincinnati Ohio	29.54	750.3	30.18	766.6	64	17.8	73	SE	4	1.8	.....	4ck	Fog	W	Calm	0	0	Clear	
Cleveland, Ohio	29.42	747.3	30.12	765.0	67	19.4	60	SW	10	4.5	.....	0	Haze	.....	Calm	0	0	Fair	
Coleman City, Texas	28.30	718.8	29.94	759.7	70	21.1	95	S	4	1.8	.....	.....	Fog	.....	.....	0	0	Clear	
Columbus, Ohio	29.34	745.2	30.17	766.3	60	15.6	82	S	5	2.2	.....	2ck	Haze	S	Calm	0	0	Foggy	
Conceo, Texas	28.18	715.8	29.81	757.2	60	15.6	84	E	4	1.8	.....	0	10s	.....	S	0	0	Fair	
Corsicana, Texas	29.68	753.9	30.14	765.5	74	23.3	90	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.45	748.0	30.08	764.0	60	15.6	94	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Decatur, Texas	28.87	733.3	29.99	761.7	75	23.9	86	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	29.35	745.5	30.12	765.0	74	23.3	90	S	8	3.6	.....	8k	0	S	.....	0	0	Fair	
Denver, Colorado	24.82	630.4	30.04	763.0	47	8.3	77	S	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Des Moines, Iowa	29.13	739.9	29.99	761.7	65	18.3	68	SE	1	0.4	.....	0	2s	.....	Calm	Inap.	Inap.	Fair	
Detroit, Michigan	29.45	747.5	30.08	764.0	63	17.2	83	SW	1	0.4	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Dodge City, Kansas	27.45	697.2	29.69	754.1	59	15.0	70	S	8	3.6	.....	5c	0	W	.....	0	0	Fair	
Dubuque, Iowa	29.39	746.5	30.08	764.0	58	14.4	70	W	1	0.4	.....	2c	5ks	W	Calm	0	0	Fair	
Duluth, Minnesota	29.55	745.5	30.02	762.5	52	11.1	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.29	744.0	30.04	762.2	68	20.0	95	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.94	760.5	30.00	762.0	60	15.6	91	SW	10	4.5	.....	.....	10s;fg	.....	SW	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	71	21.7	95	SE	.....	.....	1	.....	8s	.....	SE	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	75	23.9	42	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.40	746.7	30.09	764.3	67	19.4	69	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.44	747.8	30.08	764.0	53	11.7	80	N	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Florence, Arizona	28.37	720.6	29.97	761.2	63	17.2	52	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.52	648.2	29.58	751.3	52	11.1	47	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	69	20.6	52	W	4	1.8	.....	2k	0	S	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.60	751.8	30.12	765.0	70	21.1	85	E	3	1.3	.....	5ck	2ks	SW	S	0	0	Fair	
Fort Griffin, Texas	28.83	732.3	30.07	763.8	67	19.4	89	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Fort McKavett, Texas	27.86	707.6	29.70	754.4	77	25.0	65	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	734.0	29.98	761.5	68	20.0	90	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fredericksburg, Texas	28.37	746.0	29.88	758.9	74	23.3	81	S	5	2.2	.....	0	8ks	.....	S	0	0	Cloudy	
Galveston, Texas	30.10	764.5	30.14	765.5	80	26.7	82	E	6	2.7	.....	2cs	0	E	.....	0	0	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.45	748.0	30.08	764.0	63	17.2	83	Calm	0	0	.....	2k	5s	NW	Calm	0	0	Fair	
Indianapolis, Indiana	29.38	746.2	30.14	765.5	65	18.3	73	S	4	1.8	.....	5ck	0	W	.....	0	0	Fair	
Indianola, Texas	30.10	764.5	30.12	765.0	80	26.7	91	E	6	2.7	.....	1k	0	Calm	.....	Inap.	Inap.	Clear	
Jacksboro, Texas	28.97	735.8	30.00	762.5	74	23.3	86	S	6	2.7	.....	.....	10ks	.....	S	0	0	Cloudy	
Jacksonville, Florida	30.22	767.6	30.25	768.3	73	22.8	72	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.42	747.3	30.02	762.5	69	20.6	70	SW	10	4.5	.....	1ck	2s;hz	SW	Calm	0	0	Fair	
Key West, Florida	30.04	763.0	30.08	764.0	81	27.2	83	NE	17	7.6	.....	1k	2ks	NE	NE	0.27	6.9	Fair	
Kittyhawk, North Carolina	30.22	767.6	30.24	768.1	68	20.0	90	NW	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Knoxville, Tenne-see	29.32	744.7	30.33	770.4	60	15.6	77	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
La Crosse, Wisconsin	29.33	745.0	30.07	763.8	51	10.6	100	S	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	52	11.1	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.64	752.8	29.97	761.2	76	24.4	91	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.76	628.9	30.03	762.7	53	11.7	73	SW	8	3.6	.....	5k	0	W	.....	0	0	Fair	
Leavenworth, Kansas	29.19	741.4	30.00	762.0	68	20.0	74	SW	8	3.6	.....	5ck	2ks	SW	N	0	0	Cloudy	
Los Angeles, California	29.64	752.8	29.98	761.5	53	11.7	80	E	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
Louisville, Kentucky	29.66	753.4	30.21	767.3	63	17.2	72	S	4	1.8	.....	0	Sm'e	.....	.....	0	0	Smoky	
Lynchburg, Virginia	29.57	751.1	30.25	768.3	62	16.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.37	746.0	30.07	763.8	53	11.7	80	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.45	722.6	30.17	766.3	71	21.7	90	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.93	760.2	30.25	768.3	67	19.4	79	W	2	0.9	.....	0	8s	.....	SE	0	0	Fair	
Milwaukee, Wisconsin	29.35	745.5	30.06	763.5	61	16.1	82	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Mobile, Alabama	30.20	767.1	30.24	768.1	76	24.4	82	S	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Montgomery, Alabama	30.04	763.0	30.27	768.8	65	18.3	73	E	3	1.3	.....	10k	0	E	.....	0	0	Cloudy	
Morgantown, West Virginia	29.17	740.9	30.20	767.1	64	17.8	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.88	606.5	30.24	768.1	45	7.2	100	NW	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.75	755.6	30.28	769.1	62	16.7	77	Calm	0	0	.....	.....	Fog	.....	NW	0	0	Foggy	
New Haven, Connecticut	30.01	762.2	30.12	765.0	65	18.3	84	W	5	2.2	.....	8ck	Sm'e	NW	Calm	0	0	Fair	
New London, Connecticut	30.08	764.0	30.12	765.0	68	20.0	84	W	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.13	765.3	30.19	766.8	77	25.0	86	NE	8	3.6	.....	Haze	2s	Calm	SW	0	0	Fair	
Newport, Rhode Island	30.08	764.0	30.13	765.3	66	18.9	89	SW	8	3.6	.....	4ck	4s	E	Calm	0	0	Cloudy	
New York, New York	29.99	761.7	30.17	766.3	61	16.1	94	W	12	5.4	.....	5k	0	SW	.....	0	0	Fair	
Norfolk, Virginia	30.20	767.1	30.26	768.6	64	17.8	83	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	27.09	688.1	29.63	752.6	52	11.1	89	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.95	760.7	29.99	761.7	40	4.4	91	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.86	733.0	29.91	759.7	60	15.6	88	Calm	0	0	.....	5k	2s	SW	Calm	0	0	Cloudy	
Oswego, New York	29.75	755.6	30.06	763.5	67	19.4	79	W	2	0.9	.....	2c	0	NW	.....	0	0	Fair	
Pembina, Dakota	29.10	739.1	29.93	762.2	45	7.2	92	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.14	765.5	30.19	766.8	62	16.7	83	SW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.70	729.0	.....	.....	67	19.4	42	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.89	452.3	30.10	764.6	27	— 2.8	76	SW	14	6.3	.....	2k	0	SW	.....	0	0	Clear	
Pioche, Nevada	23.96	608.6	29.73	755.1	41.5	5.3	41	Calm	0	0	.....	2c	0	S	.....	0	0	Fair	
Pittsburg, Pennsylvania	29.38	746.2	30.17	766.3	62	16.7	77	S	3	1.3	.....	2k	0	W	.....	0	0	Fair	
Port Huron, Michigan	29.43	747.5	30.07	763.8	64	17.8	83	Calm	0	0	.....	5k	Sm'e	W	.....	0	0	Fair	
Portland, Maine	29.98	761.5	30.03	762.7	61	16.1	88	W	8	3.6	.....	1k	Haze	Calm	.....	0	0	Clear	
Portland, Oregon	29.95	760.7	30.06	763.5	47	8.3	92	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Prescott, Arizona	24.70	627.4	30.06	763.5	46	7.8	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.36	745.7	30.15	765.8	76	24.4	86	SE	5	2.2	.....	8k	0	Calm	.....	0	0	Cloudy	
Punta Rassa, Florida	30.14	765.5	30.16	766.1	77	25.0	77	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.64	752.8	30.00	762.0	53	11.7	80	SE	1	0.4	.....	Haze	Sm'e	Calm	Calm	0	0	Hazy	
Rio Grande City, Texas	29.91	759.7	30.12	765.0	77	25.0	69	SE	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Rochester, New York	29.45	748.0	30.04	763.0	70	21.1	65	W	8	3.6	.....	5k	Sm'e	W	Calm	0	0	Fair	
Roseburg, Oregon	29.50	749.3	30.08	764.0	42.5	5.8	92	Calm	0	0	.....	Haze	Sm'e	.....	Calm	0	0	Smoky	
Sacramento, California	29.92	760.0	30.00	762.0	50	10.0	90	S	5	2.2	.....	0	Sm'e;fg	.....	Calm	0	0	Smoky	
St. Louis, Missouri	29.59	751.6	30.15	765.8	67	19.4	74	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.24	768.1	30.25	768.3	70	21.1	90	NE	4	1.8	.....	5ck	0	NE	.....	0	0	Fair	
St. Paul, Minnesota	29.16	740.7	29.98	761.5	49	9.4	77	SE	5	2.2	.....	5c	0	W	.....	0	0	Fair	
Salt Lake City, Utah	25.58	649.7	29.92	760.0	54.0	12.2	74	SW	1	0.4	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
San Antonio, Texas	29.40	746.7	29.96	761.0	76	24.4	91	SE	2	0.9	.....	8cs	0	SE	.....	0	0	Cloudy	
San Diego, California	29.95	760.7	30.03	762.7	60	15.6	77	NE	3	1.3	.....	.....	10s	.....	W	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.11	764.8	66	18.9	69	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.12	765.0	30.16	766.1	68	20.0	79	W	18	8.0	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	29.98	761.5	30.05	763.3	55	12.8	77	SW	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.33	596.6	29.87	758.7	60	15.6	34	E	3	1.3	.....	10k	0	Calm	.....	Inap.	Inap.	Cloudy	
Savannah, Georgia	30.19	766.8	30.29	769.4	67	19.4	84	NE	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.97	761.2	30.18	766.6	73	22.8	76	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.34	618.2	.....	.....	45	7.2	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.25	768.3	30.29	769.4	65	18.3	89	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.98	761.5	30.11	764.8	60	15.6	88	S	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Stockton, Texas	26.98	685.3	29.98	761.5	65	18.3	68	SE	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	62	16.7	94	SW	12	5.4	.....	0	Haze	.....	.....	0	0	Clear	
Toledo, Ohio	29.42	747.3	30.08	764.0	67	19.4	74	S	6	2.7	.....	0	2ks	.....	Calm	0	0	Fair	
Tucson, Arizona	27.30	693.4	29.85	758.2	68	20.0	58	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.24	768.1	30.27	768.8	70	21.1	85	N	10	4.5	.....	0	Fog	.....	N	0	0	Fair	
Umatilla, Oregon	29.61	752.1	.....	.....	41	5.0	49	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	46	7.8	100	SE	.....	.....	1	.....	10n	.....	SE	0.22	5.6	Raining	
Uvalde, Texas	29.17	740.9	29.96	761.0	76	24.4	82	SE	1	0.4	.....	0	5ks	.....	S	0	0	Fair	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.27	616.4	29.75	755.6	45	7.2	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.65	753.1	30.03	762.7	51	10.6	78	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Washington, D. C	30.12	765.0	30.23	767.8	63	17.2	89	SW	2	0.9	.....	0	Fog	.....	SW	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	51	10.6	79	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.20	767.1	30.27	768.8	64	17.8	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	45	7.2	84	SW	12	5.4	.....	0	8s	.....	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.07	763.8	30.12	765.0	67	19.4	90	SW	8	3.6	.....	.....	10ks	.....	W	0	0	Cloudy	
Yankton, Dakota	28.73	729.7	30.02	762.5	48	8.9	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.71	754.6	29.87	758.7	64	17.8	48	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.60	751.8	29.65	753.1	36.0	2.2	95	NW	10	4.5	.....	8c	0	E	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.04	763.0	30.06	763.5	81	27.2	82	E	2.4	1.1	.....	4ck	0	NW	.....	0	0	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.98	761.5	30.00	762.0	80	26.7	82	NNW	.....	.....	1	0	2s	.....	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	87	Calm	0	0	.....	8c	2ks	E	.....	0.17	4.3	Fair	G. O. Gellich.
Kingston, Jamaica, W. I	30.13	765.3	30.14	765.5	81	27.2	91	Calm	0	0	.....	8c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.91	759.7	29.99	761.7	85	29.4	.....	NE	5	2.2	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	84	28.9	75	E	.....	.....	2	0	5k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.28	642.1	.....	.....	67.5	19.7	80	Calm	0	0	.....	2c;cs	0	.....	.....	0	0	.....	Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,757 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,070 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er. 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Up'er. From—	CLOUDS. Direction. Low'r. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.35	770.9	75	23.9	75	23.9	86	NE	6	2.7	.....	.....	5	.....	NE	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.01‡	762.2‡	.....	.....	63	17.2	83	SW	2	0.9	.....	.....	5	.....	.....	0	0	.....	.....	Misty	
Naval Hospital, Yokohama, Japan	30.04*	763.0*	75	23.9	74	23.3	95	E	.....	.....	2	.....	8ks	.....	SE	0.07	1.8	.....	.....	Cloudy	
Adams. S. 47° 35′, W. 141° 31′	29.64	752.8	57	13.9	49	9.4	93	W	.....	.....	6	.....	10	.....	W	Blank	Blank	Heavy	W	Cloudy	
Alliance, Villafranca, France	30.04‡	763.0‡	.....	.....	75	23.9	77	S	.....	.....	0-1	.....	3	.....	S	.....	.....	Light	S	Hazy	
Ashuelot. Yokohama, Japan	30.12	765.0	76	24.4	74	23.3	90	ENE	.....	.....	1	.....	8	.....	E	.....	.....	Smooth	.....	Cloudy	
Alaska, S. 39° 25′, W. 74° 36′	30.29	769.4	54	12.2	48	8.9	78	WNW	.....	.....	5	.....	2	.....	SE	0	0	Heavy	NW	D. clouds	
Colorado. New York, N. Y.	30.17‡	766.3‡	.....	.....	66	18.9	84	W	8	3.6	.....	.....	2	.....	W	0	0	.....	.....	Foggy	
Constitution, Havre, France	29.80‡	756.9‡	.....	.....	63	17.2	??	SSW	.....	.....	3	.....	10	.....	Calm	.....	.....	.....	.....	Raining	
Despatch, Volo, Turkey	29.99‡	761.7‡	.....	.....	71	21.7	41	NE	.....	.....	3	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.34	770.6	67	19.4	65	18.3	89	SW	3.6	1.6	.....	.....	2	.....	SW	0	0	.....	.....	Clear	
Gettysburg N. 41° 37′, E. 4° 32′	29.99‡	761.7‡	.....	.....	74	23.3	95	NNW	.....	.....	1	.....	0	.....	.....	0	0	Light	NW	Clear	
Guard, Bahia, Brazil	30.22	767.6	76	24.4	75	23.9	90	SE	.....	.....	2	.....	2	.....	SE	.....	.....	.....	.....	Rainy	
Hartford, Rio de Janeiro, Brazil	30.09	764.3	.....	.....	76	24.4	77	NNE	1	0.4	.....	.....	2	.....	.....	Inap.	Inap.	.....	.....	Hazy	
Marion, Naples, Italy	30.05	763.3	79	26.1	80	26.7	62	NNE	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	29.87†	758.7†	.....	.....	66	18.9	74	SSW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy. Yokohama, Japan	30.04‡	763.0‡	.....	.....	75	23.9	90	E	.....	.....	1	.....	10	.....	E	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.48†	774.2†	.....	.....	78	25.6	73	NNE	10	4.5	.....	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Onward, Callao, Peru	30.12‡	765.0†	.....	.....	64	17.8	89	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.33	770.4	64	17.8	63	17.2	100	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Palos, Tientsin, China	29.94	760.5	75	23.9	71	21.7	80	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. New York, N. Y.	30.22	767.6	65	18.3	64	17.8	89	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Powhatan, New York, N. Y.	29.41‡?	772.4‡?	.....	.....	65	18.3	89	SW	6.6	3.0	.....	.....	5?	.....	.....	0	0	.....	.....	Clear	
Ranger. Hong-Kong, China	29.70	754.4	85	29.4	85	29.4	79	SW?	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	30.02	762.5	78	25.6	78	25.6	95	NE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.18‡	766.6‡	.....	.....	65	18.3	84	W	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Saratoga, League Island, Pa	30.10*	764.5*	.....	.....	64	17.8	89	SSW	.....	.....	3	.....	2	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.10	764.5	66	18.9	64	17.8	89	SW	5	2.2	.....	.....	2	.....	WSW	0	0	.....	.....	Clear	
Supply, Havre, France	29.87	758.7	65	18.3	63	17.2	94	WSW	.....	.....	5	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Swatara. Boston, Mass.	30.09‡	764.3‡	.....	.....	64	17.8	89	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Trenton, Southampton, England	29.71‡	754.6‡	.....	.....	62	16.7	83	WNW	.....	.....	4	.....	8	.....	W	0.2	5.	.....	.....	Squally	
Tuscarora. La Paz, Mexico	29.71	754.6	79	26.1	80	26.7	87	S	.....	.....	0-1	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia. Villafranca, France	30.03‡	762.7‡	.....	.....	76	24.4	77	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.08‡	764.0‡	.....	.....	70	21.1	75	WSW	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama																			Capt. Cavarly.
S. S. City of Peking, N. 36° 58', W. 131° 20'		30.23†	767.8†	62	16.7	100	NW	21	9.4			10		NNW				Misty	Capt. Dearborn.
S. S. City of Sydney																			Capt. Maury.
S. S. City of Tokio																			Capt. Searle.
S. S. Colima																			Capt. Whitebury.
S. S. Costa Rica																			Capt. Morse.
S. S. Dakota																			Capt. Connolly.
S. S. Georgia																			Capt. Austin.
S. S. Grenada																			Capt. A. Fuller.
S. S. Wilmington																			Capt. Ghest.
S. S. Zelandia																			

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. R. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 46° 10' W. 43° 48'		30.36*	771.1*	60	15.6	88	SE			4						Low	SE	Cloudy	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 35° 26' 30", E. 139° 39' 24"		29.91*	759.7*	78	25.6	86	Calm			0		ks		E		Smooth		D. clouds	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.87†	758.7†				NE?			4		lr			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 53', W. 127° 12'		30.02	762.5	58	14.4	94	NW			4		6		NW		3	SW	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 56', W. 4° 23'		29.83	757.7	62	16.7	88	WNW			4		2		NW	8 hours	3	NW	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 45° 40', W. 38° 49'		30.41*	772.4*	63	17.2	94	E			2		10		ESE	0	Large	NNE	Cloudy	Captain Sargent.
S. S. Ohio, N. 48° 20', W. 47° 49'		30.29	769.4	58	14.4	88	SSW			2		9		SSW	0	None		Overcast	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 31° 04', W. 66° 29'		29.93	760.2	84	28.9	88	NE	7	3.1			2k		SE	0.02 in or 0.5 mm.	Heavy	SE	Clear	Capt. James Jorgensen.
Schooner Florence, (N. 57° W. 56° 27')?		29.81*	757.2*	46.2	7.9		S			3		10s			0			Clearing	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 19, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			29.97	761.3	69.4	20.8	87	NE			3		2			0	0	Fair	Dr. Ollive.
Nemours			29.97	761.3	79.2	26.2	70	NW			3		5			0	0	Cloudy	Kesxuche.
Algiers			29.91	759.7	79.9	26.6	69	ENE			3		2			0	0	Fair	Tourilliere.
La Calle			29.98	761.6	81.3	27.4	72	NNW			3		2			0	0	Fair	Foufrede.
Tunis			30.02	762.4	82.4	28.0	61	W			3		0			0	0	Clear	Jacques.
Stax			30.07	763.7	82.4	28.0	.....	E			3		0			0	0	Clear	Gau.
Saida			29.97	761.3	87.8	31.0	24	NE			1		1			0	0	Very fair	Herbin.
Tebessa			29.98	761.5	81.0	27.2	23	N			3		0			0	0	Clear	Watrin.
Geriville			30.00	762.0	83.8	28.8	48	S			3		4			0	0	Cloudy	Brugniaux.
Laghouat			30.02	762.6	86.0	30.0	32	Calm			0		1			0	0	Very fair	Bertrand.
Biskra			30.02	762.4	92.7	33.7	27	SE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.39	746.6	29.92	760.0	72.9	22.7	65	NE			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.14	740.2	29.89	759.1	70.5	21.4	77	WNW			3		4			0	0		Dr. Wierzbiski
Eperies	29.04	737.6	29.89	759.2	68.0	20.0	64	SE			2		9cs;8			0	0		Julius Mikolik.
Gratz	28.73	729.7	29.93	760.3	71.6	22.0	67	S			2		6			0	0		Andreas Rospini.
Hermannstadt	28.48	723.4	29.92	759.9	67.8	19.9	47	NE			1		0			0	0		Prof. A. Gottschling.
Kremsmünster	28.67	728.3	29.99	761.8	61.5	16.4	79	WNW			3		7			0.031	0.8		Prof. C. Wagner
Lemberg	28.88	733.6	29.84	757.8	68.0	20.0	70	W			2		5			0	0		Dr. T. Stanecki.
Pola	29.63	767.6	29.93	760.3	74.7	23.7	62	SW			1		1k			0	0		I.R.Hydrographic Office
Szathmar	29.53	750.1	29.98	761.5	70.5	21.4	48	S			1		5			0	0		Julius Csics, S. J.
Szegedin	29.67	753.6	29.94	760.5	68.7	20.4	54	Calm			0		3			0	0		Karl Stancel.
Trieste	29.86	758.5	29.97	761.1	74.1	23.4	85	WSW			1		1			0	0	Almost clear	P. Busin.
Vienna	29.25	743.0	29.95	760.6	70.5	21.4	57	W			3		7			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																0.012	0.3		Prof. M. Passau.
Brussels	29.78	756.4	29.98	761.5	57.0	13.9	72	WSW			5	7		W		0.161	4.10		Royal Observatory
Furnes																0.850	21 6		M. E. de Cae.
Maeseyck	29.88	758.9	30.01	762.2	58.8	14.9	60	WSW			6	7				0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.33	745.0	29.42	747.3	55.9	13.3	.....	WSW	18	8.0	.....	.....	4	.....	.....	0.030	0.76	Blue sky.....	W. Boswell.
Ardrossan	29.54	750.3	29.56	750.8	50	10.0	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Raining	George Carrick.
Armagh, Observatory	.....	.....	29.71	754.6	53.9	12.2	.....	WSW	11	4.9	.....	.....	5	.....	.....	.....	.....	D. clouds.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.77	756.1	55.8	13.2	.....	W	31	13.9	.....	.....	7	.....	.....	.....	.....	D. clouds.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.34	745.2	29.74	755.4	55.8	13.2	.....	NW	.....	.....	4	.....	5	.....	.....	0.23	5.8	D. clouds.....	J. McLandsborough.
Bridgetown, (Barbados)	29.93	760.2	29.96	761.0	82.5	28.1	.....	NE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds..	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.86	758.4	60.0	15.6	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds.....	H. Todd. [H.C.
Cardington	.....	.....	29.88	758.9	58.0	14.4	.....	W	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	29.80	756.9	29.93	760.2	60.2	15.7	.....	SE	.....	.....	1	.....	3	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.47	723.1	29.93	760.2	56.0	13.3	.....	NW	.....	.....	5	.....	6	.....	.....	.....	.....	Squally.....	Alexander Watt.
Donaghadee	29.66	753.4	29.68	753.9	52	11.1	.....	WNW	.....	.....	5	.....	2	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.90	759.4	29.92	760.0	61	16.1	.....	W	.....	.....	3	.....	2	.....	.....	.....	.....	¼ clouded..	J. Costello.
Eccles, (near Manchester)	.....	.....	29 75	755.6	58.0	14.4	.....	W	4.0	1.8	.....	.....	5	.....	.....	.....	.....	Squally.....	Thomas Mackereth.
Falmouth, Observatory	29.79	756.7	30.02	762 5	60.0	15.6	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.76	755.9	29.99	761.7	83	28.3	.....	S	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	29.76	755.9	53	11.7	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760 0	29.97	761.2	.....	.....	.....	E	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.35	745.5	29.55	750.6	46.8	8.2	.....	WSW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds.....	D. G. Maclean.
Great Yarmouth	29.82	757.4	29.83	757.7	58	14.4	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.76	755.9	29.93	760.2	59.4	15.2	.....	WSW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.82	757.4	30.04	763.0	60.5	15.8	.....	WNW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.10	764.5	62	16.7	.....	SW	.....	.....	4	.....	2ck	.....	.....	0.15	3.8	Fine.....	M. P. Moyle.
Holyhead	29.72	754.9	29.77	756.1	56	13.3	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.80	756.9	30.03	764.3	58.9	14.9	.....	W	.....	.....	6	.....	3	.....	.....	Blank	Blank	Squally.....	J. Fisher.
Kew, Observatory	29.89	759.2	29.92	760.0	58.2	14.6	.....	SW	16	7.2	.....	.....	4	.....	.....	.....	.....	D. clouds.....	The Staff.
Kingstown	29.78	756.4	29.80	756.9	57	13.9	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	29.83	757.7	56.0	13.3	.....	SW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.95	760.7	78	25.6	.....	NE	.....	.....	1	.....	3c	.....	.....	.....	.....	D clouds.....	Sergt. Beckett.
Nairn	29.31	744.5	29.40	746.7	54	12.2	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	82.0	27.8	.....	NE	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.65	752.6	29.82	757.4	57.7	14.3	.....	WNW	.....	.....	4	.....	10ks,k;	d].....	W	0.010	0.25	Raining.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.31	744.5	29.82	757.4	56.0	13.3	.....	WSW	.....	.....	5	.....	8	.....	.....	.....	.....	Threatening	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.89	759.2	57	13.9	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Plymouth	29.91	759.7	29.98	761.5	62.5	16.9	.....	WSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.84	757.9	29.89	759.2	57	13.9	.....	WSW	.....	.....	6	.....	10	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	29.74	755.4	29.90	759.4	57	13.9	.....	W	.....	.....	6	.....	2	.....	.....	.....	.....	Blue sky....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.31	744.5	49.4	9.7	.....	W	22	9.8	.....	.....	5	.....	.....	.....	.....	Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.96	761.0	75.0	23.9	.....	N	.....	.....	3	.....	3	.....	.....	Blank	Blank	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.41	747.0	29.69	754.1	58.4	14.7	.....	WSW	.....	.....	6	.....	3	.....	.....	0.06	1.5	Blue sky.....	W. F. Cooper.
Silloth, Rectory	29 60	751.8	29.63	752.6	58.2	14.6	73	NW	.....	.....	5	.....	1	.....	.....	0.030	0.76	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.35	745.5	29.75	755.6	53.4	11 9	.....	SW	.....	.....	5	.....	9	.....	.....	.....	.....	D. clouds	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.73	755.1	29.95	760.7	55.3	12.9	.....	W	.....	.....	2	.....	4	.....	.....	Blank	Blank	Squally.....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.32	744.7	52	11.1	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds.....	John Trotter.
Truro, Royal Institution	.....	.....	30.02	762.5	63	17.2	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	29.85	758.2	29.88	758.9	56.4	13.6	.....	W	16	7.2	.....	.....	10	.....	.....	.....	.....	Drizzling.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.63	752 6	51.0	10.6	82	NW	.....	.....	2	.....	5k	.....	.....	0.04	1.0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.91	759.7	30.10	764.4	74.2	23.4	62	SE	13.5	6.0	.....	2	2	.....	ESE	0	0	Fine...	C. Meldrum.
Melbourne, Observatory	29.72	754.9	29.81	757.2	55.2	12.9	91	N	3	1.3	.....	.....	0	.....	.....	0	0	Heavy dew..	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from–	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle. N. 35° 50', W. 8° 40'	.....	.....	.....	
Barque Margaret Smith, N. 22° 55', W. 31° 10'	0	NW	Blue sky.....	Capt. W. Waring.
S. S. Peruvian	3	Con-fused.	D. clouds.....	Capt. D. W. A. Qualle
Schooner Traveller, N. 41° 10', W 55° 50'	.....	.....	.....	Capt. W. H. Smith, R. N. [R
Barque Virginia	5	NE;SSE	D. clouds.....	Capt. Alex Simpson.
.....	.....	.....	.....	Capt. W. Spratly.
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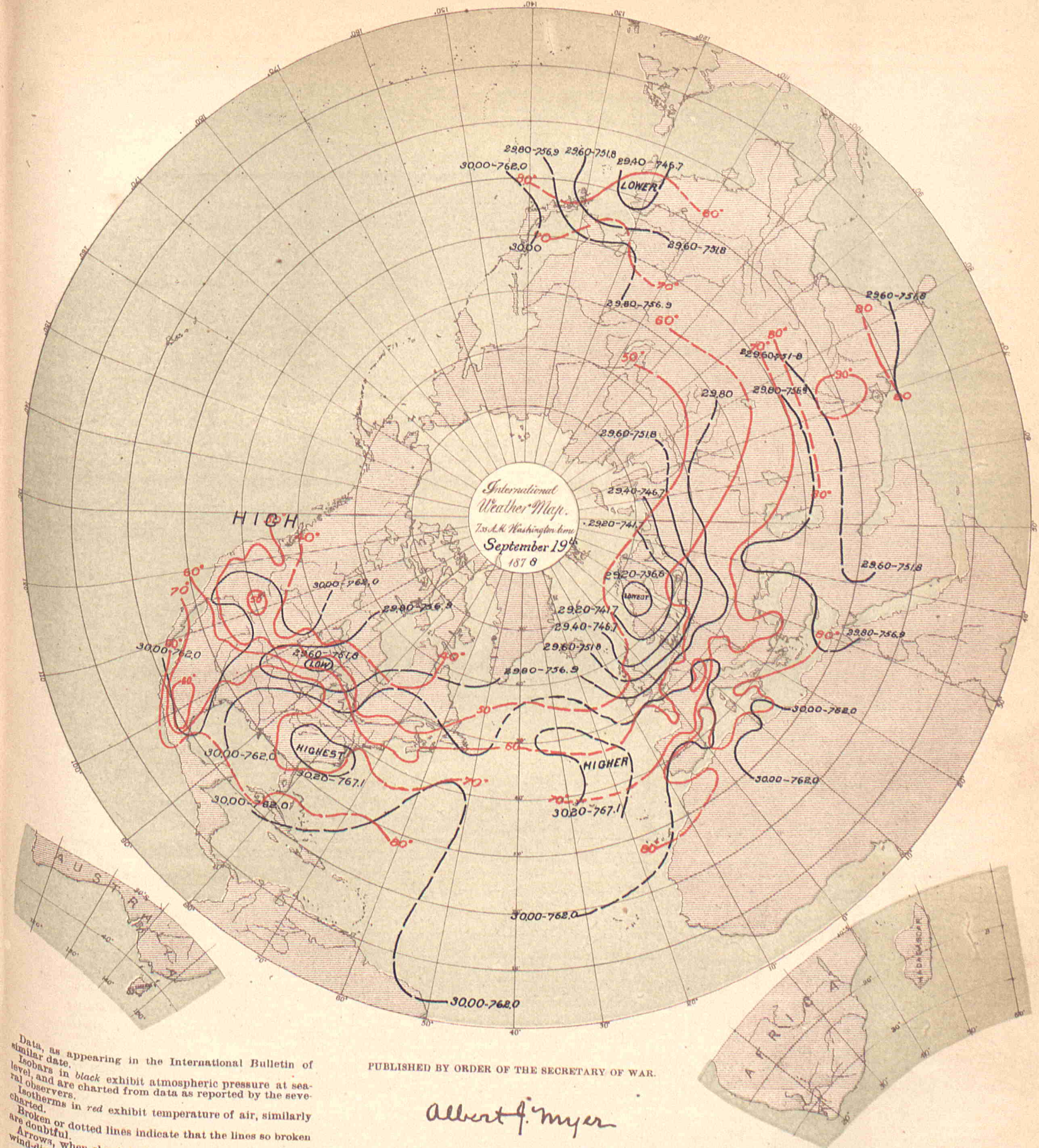
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.27	667.2	.....	.....	68.9	20.5	92	SE	.....	.....	2	.....	7cs	.....	.....	0.4	10.	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.50	749.4	29.57	750.6	55.4	13.0	62	WSW	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....
Fanöe	29.52	749.8	29.54	750.2	55.6	13.1	73	W	.....	.....	7	.....	9	.....	.....	.....	.....	Raining	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farôe)	29.39	746.5	29.45	747.4	46.0	7.8	65	N	.....	.....	4	.....	6	.....	.....	.....	.....	.....	.....
Vestervig	29.28	743.6	29.45	747.9	51.4	10.8	83	SW	.....	.....	6	.....	5	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.59	751.6	30.14	765.6	59.7	15.4	66	W	.....	.....	4	.....	5	.....	NW	0.322	8.2	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.93	760.1	30.00	762.1	81.1	27.3	43	NNW	.....	.....	3	.....	.....	.....	.....	0	0	Light clouds	M. Giraud, Director.
Bar-sur-Seine	29.56	750.7	30.11	764.7	61.3	16.3	87	SW	.....	.....	2	.....	5n	.....	W	0.173	4.4	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.79	756.6	30.08	763.9	59.5	15.3	68	W	.....	.....	2	.....	10	.....	W	0.433	11.0	Covered	Frere Eugene Marie, Director.
Besançon	29.26	743.3	30.15	765.8	59.7	15.4	68	S	.....	.....	2	.....	5	.....	SW	0.335	8.5	Cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.61	752.0	30.15	765.8	63.5	17.5	85	SW	.....	.....	3	.....	0	.....	.....	0.12	3.	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.82	757.4	30.07	763.6	66.6	19.2	70	W	.....	.....	3	.....	6	.....	W	0.305	7.75	Squally	The Staff.
Carcassonne, Normal School	29.70	754.4	30.10	764.6	73.4	23	50	W	.....	.....	1	.....	8	E	E	0	0	Very cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.37	745.9	29.93	760.1	62.6	17	77	SW	.....	.....	4	.....	10	NE	NE	0.614	15.6	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.63	752.5	29.94	760.4	63.3	17.4	50	W	.....	.....	4	.....	2	W	W	0.157	4.0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.76	730.5	30.09	764.3	64.4	18	63	NE	.....	.....	1	.....	10	.....	W	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.25	743.0	30.13	765.4	58.3	14.6	65	W	.....	.....	3	.....	2kn	.....	W	0.146	3.7	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grêasque*	28.91	734.2	30.05	763.2	81.7	27.6	29	NW	.....	.....	3	.....	2	W	.....	0	0	¼ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	30.03	762.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.83	757.7	30.14	765.5	59.4	15.2	62	W	.....	.....	3	.....	2	.....	NW	0.16	4.	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.24	742.8	30.15	765.9	60.8	16	87	NE	.....	.....	1	.....	5	.....	NW	0.205	5.20	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.18	766.5	30.21	767.3	62.6	17	80	Calm	.....	.....	0	.....	8	.....	.....	0	0	Very cloudy	M. Galzin, Director.
Mirecourt, Normal School	29.06	738.0	30.09	764.3	58.8	14.9	61	WNW	.....	.....	2	.....	8kn	.....	WNW	0.04	1.	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.84	757.8	30.01	762.2	83.1	28.4	66	N	.....	.....	6	.....	cn	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.06	738.0	30.08	764.1	73.4	23	59	N	.....	.....	1	.....	1	.....	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.26	641.6	.....	.....	45.0	7.2	94	W	.....	.....	2	.....	.....	.....	.....	6	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.17	766.2	30.20	767.0	67.1	19.5	63	NNE	.....	.....	2	.....	2	NNE	NNE	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.96	760.9	30.04	763.1	64.4	18.0	51	WSW	.....	.....	1	.....	8	.....	W	0.835	21.2	Very cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.10	764.4	62.6	17.0	66	W	.....	.....	3	.....	5	.....	NW	0.251	6 37	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.92	760.0	30.09	764.2	63.7	17.6	49	W	.....	.....	2-3	.....	7	.....	W	0.008	0.2	.....	E. Renou.
Tarbes, Normal School	29.13	739.9	30.19	766.8	64.4	18	80	SW	.....	.....	3	.....	5	SSW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.88	759.0	29.91	759.7	82.4	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchesse.
Lyons	.....	.....	30.08	764.0	64.8	18.2	47	.....	.....	.....	.....	.....	7	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.93	760.2	81.0	27.2	35	NW	.....	.....	4	.....	2	.....	.....	0	0	Partly cl'dy	The Staff.
Mont-Louis	24.98	634.4	30.20	767.4	64.0	17.8	44	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.96	761.0	73.0	22.8	76	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.81	757.2	30.09	764.2	64.4	18.0	58	W	.....	.....	4	.....	7	.....	W	0.185	4.7	.....	Marié Davy, Director
Perpignan	.....	.....	30.07	763.6	77.5	25.3	56	N	11.2	5.00	.....	.....	2	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.68	576.1	.....	.....	49.6	9.8	.....	SW	.....	.....	2	.....	8	.....	.....	0	0	Fair	Gen'l de Nansouty
Toulouse, Observatory	29.46	748.3	30.19	766.9	68.0	20.0	54	NNW	.....	.....	3	.....	3	.....	.....	0.041	1.05	.....	The Staff.
Tours	29.92	760.0	30.12	765.0	64.4	18.0	44	NNW	.....	.....	1	.....	5	.....	NNW	0	0	.....	C. Marquet.
Versailles	.....	.....	30.10	764.4	63.0	17.2	48	SW	.....	.....	2	.....	8	.....	.....	0.218	5.52	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.34	745.1	29.36	745.8	72.0	22.7	96	N	28.0	12.5	.....	.....	10n	.....	.....	2.189	55.6	Storm	Marc Decheyrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grêasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grêasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.04	737.6	29.88	758.9	59.4	15.2	51	W.			3		5	W		0.12	3.		Prof. Dr. Hoh.
Berlin	29.72	754.8	29.89	759.1	62.4	16.9	44	SW			4		4			0.012	0.3		Prof. Arndt.
Breslau	29.41	746.9	29.93	760.3	65.3	18.5	43	W			5		3			0.028	0.72		Royal University Obs'y
Carlsruhe	29.63	752.7	30.06	763.4	61.9	16.6	57	SW			2		5			0.118	3.0		Albert Senz.
Cassel	29.36	745.8	29.97	761.2	62.2	16.8	39	W			4		6	W		0	0		Dr. H. Möhl.
Crefeld	29.78	756.4	29.94	760.5	59.9	15.5	52	W			6		4k			0.24	6.		Director Lose.
Emden	29.80	756.8	29.83	757.7	59.7	15.4	58	WSW			7		5			0.622	15.8	Lightning	Prof. Prestel.
Frankfort on the Main	29.68	753.8	30.04	762.9	63.9	17.7		WSW			3		4			0.205	5.2		Physical Society.
Friedrichshafen	28.66	727.9	30.09	764.2	57.9	14.4	85	N			4		10	NW		0	0		M. Wilhelm.
Hamburg	29.71	754.5	29.78	756.3	58 1	14.5	66	W			7		8kn			0.654	16.6	Squally	Captain F. Hegemann.
Kiel	29.71	754.5	29.72	754.9	50.7	10.4	86	WSW			4		10			1.114	28.31		Prof. G. Karsten.
Königsberg, (Prussia)	29.64	752.9	29.72	755.0	61.5	16.4	55	W			7		2			0	0		Prof. E. Luther.
Köslin			29.71	754.7	59.5	15.3		SW			4		2			0	0		H. Müller.
Leipsic, Observatory	29.54	750.2	29.95	760.7	62.8	17.1	35	WSW			5		4	W		0.004	0.1		Prof. Bruhns.
Memel, Naval School	29.59	751.6	29.64	752.8	60.4	15.8	66	WSW			7		8s						Reinbrecht and Skalweit.
Neufahrwasser	29.73	755.2	29.75	755.6	61.5	16.4	46	W			6		5			0	0		A. Lothes.
Posen	29.61	752.1	29.89	759.2	63.5	17.5	37	NW			6		8			0	0		Dr. Magener.
Strassburg (in Alsace)	29.56	750.7	30.10	764.4	63.7	17.6	50	SW			4		3	W		0.118	3.01		Astronomical Observatory.
Stuttgart	29.10	739.2	30.03	762.7	62.6	17.0	48	NW			2		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.50	749.2	30.02	762.5	60.4	15.8	57	SW			6		6			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.56	725.4	30.03	762.8	57.6	14.2	53	WNW	5.8	2.6			5k		W	0.055	1.4		Dr. Von Bebber.
Wustrow, Naval School	29.69	754.1	29.73	755.1	58.3	14.6	83	SW			7		8			0.567	14.4		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.53	750.1	29.91	759.7	78.8	25.7		NE			1.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.48	748.8	29.63	750.0	85.1	29.5	63	WSW	21?	9.4?			10			0	0	Overcast	
Deesa	29.04	737.7	29.51	749.4	90.4	32.4	63	N					6	NNE		0	0	D. clouds	
Bombay	29.53	750.1	29.57	751.1	78.4	25.8	95	W	18	8.1			10		WNW	0.22	5.6	Overcast	
Poona	27.64	702.0	29.64	752.8	74.8	23.8	88	SW					10		WNW	0.13	3.3	D. clouds	
Lahore	28.74	730.1	29.46	748.2	94.1	34.6	45	N	1.4	0.6			0			0	0	Blue sky	
Belgaum					71.8	22.1	95	W	7	3.1			10		W	0.37	9.4	Showery	
Roorkee	28.66	727.9	29.55	750.5	79.8	26.6	80	SE	1	0.4			7			0.29	7.4	Misty	
Agra	28.94	735.1	29.50	749.3	80.7	27.1	89	NE					10		NE	0	0		
Nagpur	28.50	723.9	29.53	750.1	80.6	27.0	87	Calm	6.8	3.0			7			0.46	11.7	D. clouds	
Lucknow																			
Allahabad	29.17	740.8	29.47	748.9	81.7	27.6	87	ENE	2.2	1.0			10			0.22	5.6	Overcast	
Patna	29.31	744.5	29.49	749.0	83.0	31.1	78	E	1.3	0.6			4	NE	E	0	0	D. clouds	
Hazaribagh	27.53	699.4	29.52	749.8	79.8	26.6	86	ESE	5.1	2.3			8			0.55	14.0	Thunder storm	
Cuttack	29.46	748.2	29.54	750.2	84.5	29.3	72	WSW	1	0.4			4			0	0	D. clouds	
Calcutta (Alipore)	29.49	749.1	29.52	749.7	83.5	28.8	90	SW	2	0.9			8			0	0	D. clouds	
Goalpara	29.12	739.7	29.51	749.4	83.9	28.8	79	ESE	2.1	0.9			6			0	0	D. clouds	
Chittagong	29.41	747.1	29.50	749.4	80.4	26.9	87	NNW	1.9	0.8			10					Thunder-storm	
Sibsagar	29.17	740.8	29.49	749.1	86.8	30.4	69	ENE	3.4	1.5			4			2.06	52.3	Blue sky	
Jubbulpore	28.15	715.1	29.50	749.3	81.8	27.7	79	SW	6.3	2.8			5			0.02	0.5	D clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.56	750.9	29.96	761.0	73.9	23.3	61	Calm	0	0	.....	.....	2	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.84	757.9	29.95	760.6	74.8	23.8	70	ENE	3.1	1.4	.....	.....	9	WSW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.76	755.9	29.95	760.6	73.9	23.3	64	NW	0.7	0.3	.....	.....	5	E	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.65	727.7	29.93	760.3	73.8	23.2	70	NW	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.44	747.7	29.94	760.5	75.9	24.4	49	W	.....	.....	2	.....	4	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.04	737.7	29.92	760.0	74.3	23.5	57	SW	3.1	1.4	.....	.....	2	NW	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.05	712.4	29.90	759.5	72.7	22.6	62	W	.....	.....	4	.....	3	ESE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.76	755.8	29.97	761.3	75.0	23.9	65	SE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.80	757.0	29.97	761.2	75.6	24.2	64	S	.....	.....	2	.....	2	S	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.64	752.9	29.95	760.7	78.6	25.9	52	E	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.71	754.6	29.96	760.9	78.8	26.0	48	S	.....	.....	2	.....	1	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.87	758.8	29.96	760.9	76.3	24.6	65	WSW	4.3	1.9	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.90	759.5	29.95	760.7	73.4	23.0	74	N	.....	.....	.....	.....	2	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.45	722.6	29.96	761.0	70.5	21.4	63	NE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.79	756.7	29.96	761.0	80.4	26.9	52	W	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.77	756.1	29.96	761.0	80.6	27.0	59	SE	.....	.....	2	.....	3	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.73	755.1	29.98	761.4	74.3	23.5	43	N	3.1	1.4	.....	.....	1	N	.....	0	0	.....	Prof. G. De Giorgi
Cagliari	29.75	755.6	29.93	760.3	78.8	26.0	59	SE	.....	.....	2	.....	5	SW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.08	738.7	29.94	760.5	80.4	26.9	68	NW	1.3	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.73	755.1	29.98	761.4	75.0	23.9	66	NE	6.3	2.8	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.90	759.4	29.97	761.3	79.7	26.5	71	E	2.5	1.1	.....	.....	8	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.45	747.9	30.00	762.0	76.8	24.9	71	WSW	3.8	1.7	.....	.....	3	W	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.36	745.7	29.59	750.8	82.4	28.0	59	E	10.2	4.5	.....	.....	9s	.....	.....	0.105	2.67	Cloudy	
Tokei (Yeddo) Observatory	29.96	761.0	30.03	762.7	74.0	23.3	94	ESE	3.5	1.6	.....	.....	10s	.....	.....	1.420	36.07	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	29.91	759.7	30.00	762.1	74	23.3	98	E	5	2.2	.....	.....	10	.....	.....	0	0	Threatening	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	67.0	19.4	76	N	.....	.....	4	7clc	1s	NW	.....	0.071	1.8	Cloudy	P. Ceballos.
Guadalajara	25.10	637.6	30.05	763.3	59.9	15.5	74	NE	.....	.....	1	5clc	0	NE	.....	0.134	3.4	½ cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1c	0	Calm	.....	0	0	Clear	Prof. M. Leal.
Mexico	24.46	621.5	30.02	762.6	60.6	15.9	84	SW	.....	.....	.....	0	10c	.....	.....	0.10	2.5	Covered	Central Observatory.
Pabellon, (Aguascalts)	23.16	588.3	30.16	766.0	67.2	14.0	83	W	2.2	1.0	.....	1c	0	.....	.....	0	0	Clear.	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	55.9	13.3	81	NW	.....	.....	1	1c	0	.....	.....	0	0	.....	Prof. B. Gonzalez.
Tlacotalpam	23.39	594.1	30.05	763.3	52.7	11.5	90	N	1.5	0.7	.....	5c	4cs	Calm	Calm	0.03	0.69	.....	M, M. Cházaro.
San Luis Potosi	29.76	755.9	29.77	756.2	77.9	25.5	91	NNW	.....	.....	5	2clc	7n	SW	N	0.020	0.5	Misty	G. Barroeta, M. D.
Vera-Cruz	24.24	615.1	30.14	765.6	67.0	13.9	73	E	.....	.....	.....	.....	10	.....	E	0	0	Foggy	Prof. J. Rossell.
Zacatecas	23.97	761.3	30.00	762.0	81.5	27.5	81	NNW	8.5	3.8	.....	.....	10n	.....	.....	Inap.	Inap.	Rainy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	.....	.....	.....	.....	59.0	15.0	76	NE	.....	.....	2	0	4	SW	NE	0	0	.....	Prof. P. Spina, [M.M. D. D
Durango	23.32	592.4	30.08	764.1	52.3	11.3	89	ENE	0.4	0.2	.....	1	1	Calm	Calm	0.236	6.00	Almost clear	M. V. de Leon, C. E.
Colima	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Juan E. Michapam	28.36	720.4	29.98	761.4	80.4	26.9	78	E	0.8	0.4	.....	0	9	.....	.....	0.012	0.3	Very cloudy	R. Banda, C. E.
																			Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.95	760.8	29.95	760.8	60.8	16.0	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.638	16.2	.....	
Groningen	29.74	755.5	29.80	756.9	56.5	13.6	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.445	11.3	.....	
Helder	29.82	757.3	29.82	757.3	57.6	14.2	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.591	15.0	.....	
Hellevoetsluis	29.89	759.2	29.89	759.2	59.0	15.0	65	WSW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.86	758.5	29.91	759.7	61.2	16.2	57	WSW	.....	.....	5	.....	5	.....	.....	0.020	0.5	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.12	739.7	29.18	741.1	50.7	10.4	60	SW	18.3	8.2			3			0.606	15.4		
Brönö	28.95	735.3	28.99	736.3	54.0	12.2	71	N	7	3			8			0	0		
Christiania	29.04	737.6	29.18	741.2	56.7	13.7	55	SSW	13	6			3			0	0		
Tromsö	29.00	736.7	29.05	737.8	53.6	12.0	61	Calm	0	0			3			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.04	763.1	30.23	767.8	74.3	23.5	85	ESE	3.8	1.7			2			0	0		Dr. J. A. Sampaio.
Campo Major	28.96	735.5	29.91	759.8	90.9	32.7	30	SSW	3.8	1.7			2			0	0		Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.2	30.06	763.4	76 8	24.9	73	SW	8.7	3.9			9			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.61	752.1	29.86	760.9	81.3	27.4	42	NNE	7.4	3.3			2			0	0		The Staff.
Ponta Delgada, (Azores)	30.18	766.5	30.24	768.2	77.7	25.4	64	E	2.5	1.1			4			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias																		R. A. T. Pinha, Com'd.
D. Fernando																		A. M. de Sande, Com'd.
India																		A. D. Pedroso, Com'd.
Mindello																		J. F. R. R. Bastos, Com'd't.
Quanza, S. 10° 36′, E. 12° 50′			30.09	764.2	73.4	23.0		WSW			1		6		WSW	1		D. clouds	A. J. de Mattos, Com'd't
Rio Douro																			J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′			30.01	763.0	79.7	26.5		WNW			3		2		W	1		D. Clouds	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′			29.92	760.0	80.2	26.8		NE			2		10			2	NE	Drizzling	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′			29.54	750.4	83.5	28.6		NE			2		0			0		Blue sky	M. T. Guimaraes, Com'd't.

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.40	746.8	29.81	757.2	67.5	19.7	63	WSW	16.	7			10ks						Astronomical Obs.
Wilna	29.32	744.7	29.73	755.1	61.3	16.3	84	SSW	7	3			10					Heavy clouds	Astronomical Obs.
Dorpat	29.22	742.1	29.45	748.1	62.6	17.0	80	SW	13	6			10ks;n						Prof. Dr. Weihrauch.
St. Petersburg	29.38	746.3	29.40	746.7	62.4	16.9	85	S	22	10			10n						Central Physical Obs
Kuopio																			Ch. Forsten.
Kieff	29.25	743.0	29.86	758.5	67.8	19.9	62	SSW	7	3			8c;ck					Solar corona.	Physical Cabinet.
Nikolaiëv	29.84	757 8	29.91	759.6	77.4	25.2	52	NNW	4	2			0						Kurdakof.
Kertch	29.83	757.7	29.85	758.2	76.3	24.6	61	NNE	7	3			1					Light clouds	Lagorio.
Moscow	29.36	745.8	29.89	759.3	64.2	17.9	65	S	13	6			7ks						Meteorological Obs.
Lugan	29.54	750.3	29.74	755.3	75.6	24.2	45	SE	4	2			2ck						Meteorological Obs
Archangel	29.54	750.4	29.56	750.9	57.4	14.1	78	SE	9	4			10						Capt. Sseliwerstow.
Tiflis	28 41	721.7	29.76	756 0	75.7	24.3	62	SSE	4	2			2ck						Physical Observatory.
Astrakhan	30.04	762.9	29.95	760.6	70.9	21.6	55	ESE	7	3			2c;ks						Capt. Wisganow.
Krotkowo*	29.40	746.8	29.85	758.3	68.5	20.3	50	WSW	9	4			5ks						Cand. Fatjanow.
Kasan	29.61	752.2	29.88	758.9	61.3	16.3	73	S	9	4			7						Physical Cabinet.
Orenburg																			Prof. Sernow.
Ekaterinburg	29.01	736 9	29.96	760.9	52.0	11.1	79	Calm	0	0			5ck						Meteorological Obs
Nukuss	29.70	754.3	29.93	760.1	68.9	20.5	38	NE	27	12			7ks						
Tashkend	28.33	719.5	29.99	761.7	66.6	19.2	61	Calm	0	0			0						Teich, A. M.
Barnaul	29.20	741.6	29.72	754.8	50.9	10.5	65	SW	0	0			1o					Light clouds	Meteorological Obs.
Yeniseisk	29.45	748.0	29.74	755.3	46.6	8.1	89	E	7	3			10					Raining	Marks.
Irkutsk																			Usolzef.
Peking, (China)	29.65	753.0	29.79	756.6	73.2	22.9	78	Calm	0	0			8cs						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor																			

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.7	30.01	762.3	81.0	27.2	58	S	1.9	0.83		2	6ks	SW		0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	30.09	764.3	30.15	765.7	70.9	21.6	78	SW	2.2	1.00			10			0.268	6.8	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.7			68.0	20.0	77	NE	10.0	4.46			9			0	0	Almost cov.	Domingo Martin y Perez
Madrid, Royal Observatory	27.81	706.3	29.80	759.4	87.4	30.8	36	NE	8.2	3.67		1	0	WSW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.67	753.5	30.00	762.1	87.8	31.0	55	E	3.7	1.64		1	6	ENE		0	0	Cloudy	Diayo Diaz, Director.
Santiago, Met. Obs'y.	29.18	741.2	30.07	763.7	64.8	18.2	72	NE	24.8	11.11		5	3	SW		0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.98	761.6	30.05	763.2	80.2	26.8	81	ENE	9.4	4.2		2ck	1k	ESE		Inap.	Inap.	Fair	Benito Vines, S. J.
Manilla, Philippine Islands																			Federico Faura, S. J.
San Fernando, Naval Obs'y	29.87	758 6	29.96	761.0	81.3	27.4	60	SE	18.0	8.1		0	1		S	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.4	29.99	761.7	82.4	28.0	68	SW	0	0		1k	0	S	W	0	0	Clear	Leonardo de Tejada, Ch'f Eng'r.

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.00	736.6	29.04	737.6	54.0	12.2	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	
Umea	28.96	735.5	29.01	736.8	51.4	10.8	98	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	28.96	735.6	29.01	736.9	57.2	14.0	59	SW	.....	.....	2	.....	5	.....	.....	0.256	6.5	.....	
Stockholm	29.08	738.7	29.26	743.2	57.6	14.2	95	WSW	.....	.....	2	.....	5	.....	.....	0.079	2.0	.....	
Wisby	29.31	744.5	29.37	746.0	56.1	13.4	64	W	.....	.....	8	.....	3	.....	.....	0.498	12.6	.....	
Sub-Series.																			
Upsala	29.13	739.9	29 21	741.8	57.6	14.2	68	SSW	16.8	7.5	....	.....	6	WSW	WSW	0.089	2.26	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.64	727.6	30.02	762.6	69.1	20.6	54	W	.....	.....	2	.....	8	.....	.....	0	0	Vapory.....	The Observatory.
Zurich	28.50	723.8	30.13	765.8	55.4	13.0	82	NW	.....	.....	1	.....	10	.....	.....	0.059	1.5	Covered.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.6 mm.; Thermometer, +3.0 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.91	759.7	69.3	20.7	76	NNW	22	10.0	.....	6	.....	NNE		0	0	.....	The Observatory.
Valona	.....	.....	30.05	763.2	74.7	23.7	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.58	751.3	29.69	754.2	76.6	24.7	69	NW	.....	.....	2	.....	10n	.....	W	0.53	13.5	Overcast.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.81	757.2	30.11	764.8	64	17.8	.....	S	2	0.9	.....	2c	0	SW	.....	0	0	Clear.....	W. R. Rigg.
*Chatham, N. B	30.09	764.3	30.15	765.8	52	11.1	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island	30.09	764.3	30.13	765.3	60	15.6	74	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.88	758.9	30.07	763.6	55.7	13.2	89	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	49.8	9.9	87	W	.....	.....	2	.....	.....	.....	.....	0	0	Clear.....	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	W. H. Bevis.
*Father Point, Quebec	30.11	764.8	30.13	765.3	40	9.4	82	SW	3	1.3	.....	5k	Haze	W	Calm	0	0	Fair.....	J. McWilliams.
Fredericton, N. B	30.13	765.3	30.19	766.8	51.1	10.6	93	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	Prof. Harrison.
*Fort Garry Manitoba	29.06	738.1	29.99	759.4	40	4.4	100	N	7	3.1	.....	5k	5n	NW	NW	0.020	0.51	Cloudy.....	James Stewart.
Granton, Ontario	28.92	734.6	30.09	764.3	63	17.2	100	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast....	James Grant.
*Halifax, N. S	29.95	760.7	30.08	764.0	59	15.0	87	N	4	1.8	.....	2c	0	N	.....	0	0	Fair.....	E. Allison, M. A.
Hamilton, Ontario	29.69	754.1	30.06	763.5	60.5	15 8	89	SW	.....	.....	2	4c	0	W	.....	0	0	Fair.....	Geo. Dickson, M. A.
Heart's Content, N. F	29.93	760.2	29.94	760.5	61	16.1	87	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast....	E. Weedon.
*Kingston, Ontario	29.76	755.9	30.09	764.3	63	16.7	95	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.07	763.8	30.11	764.8	61.0	16.1	69	N	6	2.7	.....	1c	0	N	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	29.91	759.7	30.11	764.8	57	13.9	92	SW	5	2.2	.....	0	5ks?	.....	.....	0	0	Cloudy?.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.31	744.5	30.01	762.2	46	7.8	84	E	12	5.4	.....	2k	5ks	SW	SW	0	0	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.33	745.0	30.07	763.8	54.7	12.6	93	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.37	746.0	30.05	763.3	62	16.7	100	SW	4	1.8	.....	5ck	0	NW	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.07	763.8	30.12	765.0	62.6	17.0	.....	NW	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.41	747.0	30.03	762.7	67	19.4	93	W	6	2.7	.....	.....	5ks	.....	W	0	0	Cloudy.....	M. Payne.
*Quebec, Quebec	29.81	757.2	30.13	765.3	52	11.1	73	Calm	.....	.....	.....	2c	2s	.....	S	0	0	Hazy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.61	752.1	30.07	763.8	49	9.4	100	E	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy.....	W. H. McIntyre.
St. Andrews, N. B	30.09	764.3	30.14	765.6	56	13.3	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.00	762.0	30.16	766.1	56	13.3	87	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	29.98	761.5	60	15.6	95	S	8	3.6	.....	.....	10n	.....	SW	0.08	2.0	Light rain...	K. Stewart.
Stayner, Ontario	29.21	741.9	29.98	761.5	59	15.0	82	Calm	0	0	.....	.....	10n	.....	NW	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.01	762.2	60.2	15.7	98	S	8	1.3	.....	2cs;cs	4s	SW	.....	0	0	Fair.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.06	763.5	30.09	764.3	61	16.1	72	N	7	3.1	.....	0	2ks	.....	NE	0	0	Clear.....	T. C. Hill.
*Toronto, Ontario	29.07	753 6	30.05	763.3	60	15.6	88	E	8	1.3	.....	2k	5ks	W	W	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	66.0	18.9	89	SW	.....	.....	.....	4k	4s	.....	.....	0.20	5.1	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.94	760.5	30.16	766.1	67	13.9	87	N	1	0.4	.....	0	Fog	.....	.....	0	0	Clear	
Alpena, Michigan	29.24	742.7	29.86	758.4	61	16.1	94	SE	1	0.4	.....	.....	10n	.....	S	0.60	15.2	Light rain	
Atlantic City, New Jersey	30.12	765.0	30.14	765.5	67	19.4	90	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.06	763.5	30.24	768.1	65	18.3	89	Calm	0	0	.....	.....	Fog	.....	N	0	0	Foggy	
Baltimore, Maryland	30.12	765.0	30.16	766.1	67	19.4	79	Calm	0	0	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.13	765.3	30.15	765.8	67	19.4	84	N	6	2.7	.....	0	Haze	.....	Calm	0	0	Hazy	
Bismarck, Dakota	28.14	714.7	29.99	761.7	46	7.8	62	NW	16	7.2	.....	.....	10s	.....	NW	0	0	Cloudy	
Boerne, Texas	28.56	725.4	.....	.....	73	22.8	85	SE	7	3.1	.....	8k	0	SE	.....	0	0	Cloudy	
Boise City, Idaho	27.09	688.1	30.05	763.3	46	7.8	54	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.04	763.0	30.19	766.8	66	18.9	64	N	5	2.2	.....	2k	Haze	N	Calm	0	0	Clear	
Brackettville, Texas	28.84	732.5	29.83	757.7	74	23.3	86	S	6	2.7	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Breckenridge, Minnesota	28.80	731.5	29.78	756.4	46	7.8	96	N	16	7.2	.....	.....	10s	.....	N	0.13	3.3	Cloudy	
Brownsville, Texas	29.93	760.2	29.99	761.7	75	23.9	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.35	745.5	30.03	762.7	68	20.0	74	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	52	11.1	66	Calm	.....	.....	0	0	0	.....	.....	0	0	Smoky	
Burlington, Vermont	29.93	760.2	30.19	766.8	57	13.9	81	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cairo, Illinois	29.66	753.4	30.04	763.0	70	21.1	80	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	49	9.4	50	NE	.....	.....	1	0	Haze	.....	Calm	0	0	Hazy	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	55	12.8	28	N	.....	.....	2	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.71	678.4	30.20	767.1	48	8.9	56	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	54	1.1	79	Calm	0	0	.....	.....	Sm'e	.....	Calm	0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.21	767.3	72	22.2	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.15	765.8	30.17	766.3	67	19.4	79	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Hazy	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	70	21.1	90	NE	8	3.6	.....	0	Haze	.....	NE	0	0	Hazy	
Cape May, New Jersey	30.13	765.3	30.16	766.1	71	21.7	90	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.20	741.7	29.83	758.9	76	24.4	91	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.20	767.1	30.26	768.6	70	21.1	90	NE	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	24.09	609.6	29.94	760.5	42	5.6	91	N	20	8.9	.....	.....	10n	.....	W	0.04	1.0	Light rain	
Chicago, Illinois	29.22	742.2	29.88	758.9	70	21.1	95	SW	10	4.5	.....	5k	2s	Calm	SW	0.01	0.3	Fair	
Cincinnati Ohio	29.47	748.5	30.10	764.5	66	18.9	79	SE	3	1.3	.....	1k	Fog	SW	Calm	0	0	Clear	
Cleveland, Ohio	29.37	746.0	30.04	764.0	65	18.3	73	SE	8	3.6	.....	0	Sm'e	.....	Calm	0	0	Clear	
Coleman City, Texas	28.20	716.3	29.80	756.9	70	21.1	75	SE	8	3.6	.....	0	2ks	.....	S	0	0	Fair	
Columbus, Ohio	29.29	744.0	30.11	764.8	63	17.2	72	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Corpus Christi, Texas	28.17	715.5	29.67	753.6	69	20.6	84	Calm	0	0	.....	0	10s	.....	S	0	0	Cloudy	
Corsicana, Texas	29.57	751.1	30.03	762.7	72	22.2	90	S	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.24	742.7	29.85	758.2	72	22.2	80	SW	16	7.2	.....	4ck	0	W	.....	0	0	Fair	
Decatur, Texas	28.84	732.5	29.98	761.5	69	20.6	85	SE	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.28	742.4	30.00	762.0	71	21.7	90	S	14	6.3	.....	.....	10s	.....	S	0	0	Cloudy	
Denver, Colorado	24.74	628.4	29.96	761.0	51	10.6	65	N	8	3.6	.....	.....	10s	.....	NE	Inap.	Inap.	Cloudy	
Des Moines, Iowa	28.87	733.3	29.69	754.1	74	23.3	76	S	15	6.7	.....	0	6s	.....	S	0	0	Fair	
Detroit, Michigan	29.33	745.0	29.98	761.5	68	20.0	74	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.22	691.4	29.37	746.0	70	21.1	70	S	24	10.7	.....	2k	5ks	Calm	SW	0	0	Fair	
Dubuque, Iowa	29.10	739.1	29.76	755.9	72	22.2	71	S	8	3.6	.....	8k	0	SW	.....	0	0	Fair	
Duluth, Minnesota	28.97	735.8	29.61	752.1	60	15.6	88	Calm	0	0	.....	.....	10s	.....	E	0.48	12.2	Cloudy	
Eagle Pass, Texas	29.24	742.7	29.96	761.0	74	24.3	95	Calm	0	0	.....	0	5ks	.....	S	0	0	Fair	
Eastport, Maine	30.09	764.3	30.16	766.1	58	14.4	76	N	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	73	22.8	95	Calm	.....	.....	0	Fog	0	Calm	.....	0	0	Dense fog	
El Paso, Texas	.....	.....	.....	.....	76	24.4	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.37	746.0	30.05	763.3	69	20.6	70	S	6	2.7	.....	2ck	0	W	.....	0	0	Fair	
Escanaba, Michigan	29.06	738.1	29.67	753.6	64	17.8	89	S	12	5.4	.....	.....	10s	.....	S	0.53	13.5	Cloudy	
Florence, Arizona	28.49	723.6	30.05	764.3	56	13.3	57	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.46	646.7	29.52	749.8	60	15.6	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.22	640.6	30.18	766.6	66	18.9	64	W	8	3.6	.....	2k	0	S	.....	Inap.	Inap.	Fair	
Fort Gibson, Indian Ter.	29.47	748.5	29.99	761.7	70	21.1	85	S	4	1.8	.....	2c	0	NW	.....	0.02	0.5	Clear	
Fort Griffin, Texas	28.69	728.7	29.92	760.0	68	20.0	84	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.75	704.8	29.59	751.6	73	22.8	76	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.76	730.2	29.81	757.2	71	21.7	75	S	12	5.4	.....	0	2s	.....	S	0	0	Fair	
Fredericksburg, Texas	28.25	717.5	29.75	755.6	72	22.2	90	S	3	1.3	.....	0	8ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.98	761.5	30.02	762.5	80	26.7	78	SE	13	5.8	.....	.....	10ks	.....	SE	0	0	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.24	742.7	29.86	758.4	69	20.6	85	S	17	7.6	.....	0	8ks	.....	Calm	0	0	Threatening	
Indianapolis, Indiana	29.29	744.0	30.04	763.0	69	20.6	70	S	4	1.8	.....	8k	2s	Calm	Calm	0	0	Cloudy	
Indianola, Texas	29.98	761.5	30.01	762.2	77	25.0	91	SE	5	2.2	.....	1k	0	Calm	.....	0.01	0.3	Clear	
Jacksboro, Texas	28.84	732.5	29.92	760.0	74	23.3	59	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.17	766.3	30.19	766.8	76	24.4	73	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.26	743.2	29.84	757.9	76	24.4	73	SW	14	6.3	.....	0	2s	.....	Calm	0	0	Clear	
Key West, Florida	30.03	762.7	30.06	763.5	81	27.2	74	E	10	4.5	.....	1k	1s	E	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.17	766.3	30.19	766.8	71	21.7	90	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.26	743.2	30.26	768.6	61	16.1	77	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
La Crosse, Wisconsin	28.97	735.8	29.66	753.4	72	22.2	80	SW	13	5.8	.....	5k	2s	W	W	0.04	1.0	Fair	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	65	18.3	53	W	1	0.4	.....	0	6s	.....	SW	0	0	Fair	
Laredo, Texas	29.51	749.5	29.84	757.9	77	25.0	86	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.86	631.4	30.14	765.5	34	1.1	100	N	7	3.1	.....	.....	10n	.....	Calm	0.25	6.3	Light snow	
Leavenworth, Kansas	29.01	736.8	29.80	756.9	74	23.3	76	SW	14	6.3	.....	2c	8ks	N	SW	0	0	Cloudy	
Los Angeles, California	29.68	753.9	30.02	762.5	53	11.7	76	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.57	751.1	30.12	765.0	68	20.0	70	S	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.52	749.8	30.19	766.8	64	17.8	78	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.95	735.3	29.62	752.3	63	17.2	83	SW	20	8.9	.....	8cs	2s	SW	Calm	0.42	10.7	Cloudy	
Mason, Texas	28.34	719.8	30.03	762.7	71	21.7	90	SE	3	1.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Memphis, Tennessee	29.79	756.7	30.10	764.5	70	21.1	71	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.11	739.4	29.80	756.9	70	21.1	90	SW	11	4.9	.....	8ck	0	Calm	.....	0	0	Fair	
Mobile, Alabama	30.14	765.5	30.18	766.6	71.5	21.9	87	S	4	1.8	.....	5ck;k	2s	W;SE	Calm	0	0	Fair	
Montgomery, Alabama	29.97	761.2	30.20	767.1	65	18.3	73	SE	3	1.3	.....	5c	0	Calm	.....	0	0	Fair	
Morgantown, West Virginia	29.13	739.9	30.16	766.1	64	17.8	83	SW	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	24.01	609.8	30.37	771.4	30	3.9	63	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Nashville, Tennessee	29.66	753.4	30.19	766.8	65	18.3	78	E	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Smoky	
New Haven, Connecticut	30.06	763.5	30.18	766.6	65	18.3	78	N	5	2.2	.....	2ck	Haze	Calm	Calm	0	0	Clear	
New London, Connecticut	30.13	765.3	30.18	766.6	66	18.9	79	N	4	1.8	.....	0	Haz	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.05	763.3	30.11	764.8	73	22.8	76	NE	3	1.3	.....	5k	0	SE	.....	0	0	Fair	
Newport, Rhode Island	30.13	765.3	30.18	766.6	64	17.8	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.01	762.2	30.19	766.8	71	21.7	71	NE	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.16	766.1	30.22	767.6	67	19.4	84	SW	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
North Platte, Nebraska	26.94	684.3	29.41	747.0	59	15.0	82	N	14	6.3	.....	.....	10s	.....	N	0	0	Cloudy	
Olympia, Washington Ter.	30.07	763.8	30.11	764.8	46	7.8	100	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	28.65	727.7	29.65	753.4	71	21.7	90	SW	12	5.4	.....	.....	10s	.....	SW	0.02	0.5	Threatening	
Oswego, New York	29.81	757.2	30.18	766.3	59	15.6	88	S	9	4.0	.....	2c	2s	NW	W	0	0	Fair	
Pembina, Dakota	29.04	737.6	29.87	758.7	40	4.4	100	N	18	8.0	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.12	765.0	30.18	766.6	71	21.7	66	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.82	732.0	.....	.....	56	13.3	46	N	.....	.....	1	0	0	.....	.....	0	0	Clear.	
Pike's Peak, Colorado	17.75	449.7	29.96	761.0	21	— 6.1	71	SW	28	12.5	.....	2k	0	SW	.....	0.01	0.3	Clear	
Ploche, Nevada	24.03	610.4	29.80	756.9	41	5.0	57	S	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.13	765.3	62	16.7	88	SE	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.31	744.5	29.95	760.7	69	20.6	80	S	9	4.0	.....	10ck	Sm'e	W	Calm	0	0	Cloudy	
Portland, Maine	30.12	765.0	30.17	766.3	60	15.6	77	Calm	0	0	.....	0	8me;hz	.....	.....	0	0	Clear	
Portland, Oregon	30.07	763.8	30.17	766.3	52	11.1	93	Calm	0	0	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.84	630.9	30.20	767.1	87	2.8	63	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.24	742.7	30.04	763.0	73	22.8	80	SE	13	5.8	.....	10k	0	S	.....	0	0	Cloudy	
Punta Rassa, Florida	30.11	764.8	30.13	765.3	77	25.0	69	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.74	755.4	30.10	764.5	54	12.2	87	SE	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.81	757.2	30.02	762.5	77	25.0	69	SE	1	0.4	.....	5k	0	SE	.....	0	0	Fair	
Rochester, New York	29.46	748.3	30.06	763.5	64	17.8	76	S	6	2.7	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
Roseburg, Oregon	29.59	751.6	30.17	766.3	47.5	8.6	92	Calm	0	0	.....	.....	10s;sme	.....	Calm	0	0	Cloudy	
Sacramento, California	30.00	762.0	30.08	764.0	70	10.0	93	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear.	
St. Louis, Missouri	29.47	748.5	30.02	762.5	74	23.3	76	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.17	766.3	30.19	766.8	67	19.4	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.79	731.3	29.56	750.8	66	18.9	90	NW	4	1.8	.....	.....	10n	.....	W	0.18	4.6	Light rain	
Salt Lake City, Utah	25.57	649.5	29.90	759.4	50.0	10.0	86	W	2	0.9	.....	.....	10n	.....	Calm	0.21	5.3	Heavy rain	
San Antonio, Texas	29.31	744.5	29.87	758.7	76	24.4	91	Calm	0	0	.....	0	10s	.....	SE	0.06	1.5	Threatening	
San Diego, California	29.98	761.5	30.05	763.3	56	13.3	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.39	746.5	30.04	763.0	67	19.4	74	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.13	765.3	30.16	766.1	69	20.6	85	NE	9	4.0	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	30.04	763.0	30.10	764.5	54	12.2	87	W	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	47	8.3	48	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
Savannah, Georgia	30.14	765.5	30.24	768.1	67	19.4	89	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear.	
Shreveport, Louisiana	29.86	758.4	30.08	764.0	70	21.1	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.22	615.2	.....	.....	55	12.8	88	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.21	767.3	30.24	768.1	68	20.0	84	N	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
Springfield, Massachusetts	30.05	763.3	30.18	766.6	63	17.2	78	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.02	683.8	29.92	760.0	66	18.9	40	SE	6	2.7	.....	4k	0	Calm	.....	0.20	5.1	Fair	
Thatcher's Island, Mass	30.12	765.0	30.17	766.3	62	16.7	88	N	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Toledo, Ohio,	29.35	745.5	29.99	761.7	69	20.6	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	62	16.7	40	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.19	766.8	30.22	767.6	72	22.2	90	N	9	4.0	.....	0	Fog	.....	N	0	0	Fair	
Umatilla, Oregon	29.65	753.1	.....	.....	50	10.0	58	SE	4	1.8	.....	.....	Sm'e	.....	SE	0	0	Smoky	
Unalashka, Aleutian Islands	.....	.....	.....	.....	47	8.3	100	NW	.....	.....	4	.....	10n	.....	NW	0.42	10.7	Raining	
Uvalde, Texas	29.07	738.4	29.86	758.4	75	23.9	86	E	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Virginia City, Montana	24.28	616.7	29.76	755.9	42	5.6	66	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.73	755.1	30.11	764.8	50	10.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.08	764.0	30.19	766.8	67	19.4	84	N	1	0.4	.....	0	Sm'e	.....	W	0	0	Smoky	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	62	N	.....	.....	1	0	Haze	.....	Calm	0	0	Hazy	
Wilmington, N. Carolina	30.14	765.5	30.22	767.6	66	18.9	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Winnemucca, Nevada	29.66	651.8	30.02	762.5	43	6.1	67	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.11	764.8	30.16	766.1	64	17.8	89	NW	4	1.8	.....	Haze	0	.....	.....	0	0	Hazy	
Yankton, Dakota	28.48	723.4	29.72	754.9	57	13.9	90	NE	3	1.3	.....	2cs	0	W	.....	0.09	2.3	Fair	
Yuma, Arizona	29.79	756.7	29.96	761.0	60	15.6	70	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.71	754.6	29.76	755.9	35.0	1.7	95	N	17	7.6	.....	4k	4s	S	N	0	0	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.02	762.5	30.04	763.0	81	27.2	82	E	3.6	1.6	.....	2cs	4ks	Calm	E	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.94	760.5	29.97	761.2	80	26.7	86	N	.....	.....	1	8c	2s	W	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	79	SW	3	1.3	.....	0	2ks	.....	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.13	765.3	30.14	765.5	81	27.2	91	Calm	0	0	.....	8c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	84	28.9	.....	NE	7.9	3.5	.....	.....	.....	.....	.....	0	0	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.01	762.2	83	28.3	71	E	.....	.....	2	5ck	4k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	67.8	19.9	78	Calm	0	0	.....	5cs	0	.....	.....	0	0	.....	Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,383 (?) ft., or 406.3 (?) m.; Boise City, 2,569 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,100 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,000 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,014 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,280 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,500 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,319.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,460 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.004 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.30	769.6	75	23.9	75	23.9	86	NE	6	2.7	.....	.....	2	.....	N	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.16‡	766.1‡	.....	.....	61	16.1	82	WSW	1	0.4	.....	.....	2	.....	.....	0	0	.....	.....	Misty	
Naval Hospital, Yokohama, Japan	30.03*	762.7*	76	24.4	75	23.9	95	Calm	.....	.....	0	.....	10ks	.....	SW	Inap.	Inap.	.....	.....	Gloomy	
Adams. S. 47° 45′, W. 137° 20′	29.10	739.1	56	13.3	56	13.3	51	W	.....	.....	5–8	.....	2	.....	W	0	0	Heavy	W	Fair	
Alliance, Leghorn, Italy	29.97‡	761.2‡	.....	.....	76	24.4	68	W	.....	.....	0–1	.....	2	.....	Calm	.....	.....	None	.....	Hazy	
Ashuelot. Yokohama, Japan	30.11	764.8	77	25.0	76	24.4	95	ENE	.....	.....	1	.....	10	.....	ENE	.....	.....	Smooth	.....	Cloudy	
Alaska. S. 37° 45′, W. 74° 14′	30.55	776.0	56	13.3	52	11.1	66	S	.....	.....	2	.....	5	.....	NW	0	0	Long	SW	D. clouds	
Colorado, New York, N. Y.	30.19‡	766.8‡	.....	.....	70	21.1	80	N	3	1.3	.....	.....	.....	.....	.....	0	0	.....	.....	Foggy	
Constitution, Havre, France	30.01‡	762.2‡	.....	.....	62	16.7	94	SW	.....	.....	4	.....	8	.....	SW	.....	.....	.....	.....	Pleasant	
Despatch, Volo, Turkey	29.98‡	761.5‡	.....	.....	75	23.9	52	SE	.....	.....	2	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va.	30.28	769.1	70	21.1	66	18.9	94	W	3.6	1.6	.....	.....	2	.....	W	0	0	.....	.....	Clear	
Gettysburg N. 39° 25′, E. 1° 31′	29.99‡	761.7‡	.....	.....	80	26.7	100	ESE	.....	.....	4	.....	2	.....	Calm	0	0	Smooth	.....	Clear	
Guard. Bahia, Brazil	30.19	766.8	79	26.1	79	26.1	62	SE	.....	.....	3	.....	5	.....	SE	.....	.....	.....	.....	Fair	
Hartford, Rio de Janeiro, Brazil	29.97	761.2	.....	.....	79	26.1	74	E	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	.....	Hazy	
Marion, Naples, Italy	30.00	762.0	75	23.9	78	25.6	78	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	29.97†	761.2‡	.....	.....	67	19.4	84	SSE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy, Yokohama, Japan	30.01‡	762.2‡	.....	.....	77	25.0	91	NE	.....	.....	1–2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.40†	772.1‡	.....	.....	80	26.7	87	N	6	2.7	.....	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Onward, Callao, Peru	30.11†	764.8‡	.....	.....	64	17.8	83	S	.....	.....	2	.....	10	.....	.....	0	0	.....	.....	Misty	
Passaic, Washington, D. C.	30.29	769.4	68	20.0	67	19.4	100	SW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Pa[illegible], Yentsin, China	29.87	758.7	75	23.9	70	21.1	75	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. New York, N. Y.	30.24	768.1	71	21.7	71	21.7	75	NE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, New York, N. Y.	30.18‡	766.6‡	.....	.....	72	22.2	76	NNE	6.0	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	29.70	754.4	86	30.0	86	30.0	83	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.96	761.0	77	25.0	77	25.0	65	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.16‡	765.1‡	.....	.....	70	21.1	75	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Hazy	
Saratoga, League Island, Pa	30.06*	763.5*	.....	.....	70	21.1	85	Var.	.....	.....	0–1	.....	2	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.08	764.0	70	21.1	68	20.0	90	NW	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Supply, Havre, France	30.10	764.5	63	17.2	62	16.7	66	W	.....	.....	4	.....	8	.....	.....	.....	.....	.....	.....	Light rain	
Swatara, Boston, Mass.	30.17‡	766.3‡	.....	.....	65	18.3	73	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Trenton, Southampton, England	29.93‡	760.2‡	.....	.....	60	15.6	76	W	.....	.....	4	.....	8	.....	W	1.6	41.	.....	.....	Showery	
Tuscarora. Ventana Bay, Lower California	29.72	754.9	83	28.3	82	27.8	83	SW	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia. Villafranca, France	29.96‡	760.7‡	.....	.....	75	23.9	77	ESE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.19‡	766.8‡	.....	.....	63	17.2	72	N	4	1.8	.....	.....	5	.....	Calm	0	0	.....	.....	Fair	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co-operation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 37° 27', W. 124° 10'		30.18†	766.3†	68	14.4	100	NNW	19	8.5		10		NW	Light				Drizzling	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 48° 30' W. 36° 00'		30.23*	767.8*	62	16.7	94	SSE			5						Mod'ate	SSE	Cloudy	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, Yokohama, Japan		29.67*	753.6*	78	25.6	86	SSW			5		n		SW		Mod'ate	SW	Showery	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.74†	755.4†				NE			4		k			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 09', W. 132° 20'		30.13	765.3	61	16.1	88	N			5		3		NW	1	W		Showery	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 51° 34', E. 2° 13'		29.92	760.0	66.5	19.2	55	WNW			5		2		W		3	W	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 47° 47', W. 32° 05'		30.20*	767.1*	63	17.2	100	ESE			3		5		SE	0	Mod'ate	NW	Cloudy	Captain Sargent.
S. S. Ohio, N. 45° 52', W. 34° 30'		29.98	761.5	62.5	16.9	97	W			2		10		W	Mod'ate	None		Foggy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 29° 36', W. 65° 14'		29.92	760.0	83	28.3	71	N	15	6.7			2k		N	0	Swell	NE	Clear	Capt. James Jorgensen.
Schooner Florence, N. 56° 45' W. 55° 45'		29.84*	757.9*	44.4	6.9		W			3	0	6ks?		W	0.51 in or 13.0 mm.			Clear?	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 20, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.01	762.3	70.2	21.2	84	NE	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Dr. Ollive.
Nemours	.....	.....	29.95	760.7	79.9	26.6	81	NW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair.	Kesxuche.
Algiers	.....	.....	29.87	758.7	76.8	24.6	87	NE	.....	.....	3	.....	10	.....	.....	0	0	Covered	Tourillere.
La Calle	.....	.....	29.93	760.1	77.7	25.4	80	ENE	.....	.....	6	.....	6	.....	.....	0	0	Cloudy	Foufrede.
Tunis	.....	.....	29.94	760.5	81.5	27.5	71	E	.....	.....	5	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.04	763.0	82.4	28.0	.....	E	.....	.....	5	.....	6	.....	.....	0.079	2.0	Cloudy	Gau.
Saida	.....	.....	29.95	760.7	83.5	28.6	27	N	.....	.....	1	.....	2	.....	.....	0	0	Fair	Herbin.
Tebessa	.....	.....	29.95	760.7	82.4	28.0	27	W	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	29.98	761.4	80.6	27.0	57	S	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Brugniaux.
Laghouat	.....	.....	30.02	762.6	76.6	24.8	42	W	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair.	Bertrand.
Biskra	.....	.....	30.01	762.2	83.1	28.4	31	SE	.....	.....	1	.....	6	.....	.....	0.039	1.0	Cloudy.	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.40	746.8	29.93	760.3	71.4	21.9	65	NE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.22	742.3	29.97	761.3	66.6	19.2	74	SE	.....	.....	1	.....	10	.....	.....	0.071	1.8	.....	Dr. Wierzbiski
Eperies	29.10	739.1	29.95	760.7	70.2	21.2	65	Calm	.....	.....	0	.....	9c	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.72	729.5	29.95	760.6	64.9	18.3	76	SW	.....	.....	2	.....	7	.....	.....	0	0	.....	Andreas Rospini.
Hermannsiadt	28.52	724.4	29.91	760.5	74.8	23.8	56	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremtmünster	28.61	726.6	29.93	760.1	59.4	15.2	72	Calm	.....	.....	0	.....	10	.....	.....	0.079	2.0	.....	Prof. C. Wagner
Lemberg	29.00	736.6	29.95	760.8	67.8	19.9	73	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.80	756.9	29.91	759.6	74.8	23.8	77	SE	.....	.....	2	.....	8ks	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.54	750.3	29.98	761.6	74.8	23.8	54	E	.....	.....	3	.....	4	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.67	753.5	29.94	760.4	73.0	22.8	48	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.83	757.7	29.93	760.3	77.0	25.0	80	W	.....	.....	1	.....	1	.....	.....	6.408	162.8	Thunder-storm	P. Busin.
Vienna	29.24	742.7	29.94	760.4	65.1	18.4	60	SE	.....	.....	1	.....	8	.....	.....	0.028	0.70	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet. Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.43	722.1	29.03	760.1	54.7	12.6	76	WSW	.....	.....	2	.....	10	.....	.....	0.409	10.4	.....	Prof. M. Passau.
Brussels	29.66	753.4	29.86	758.4	53.8	12.1	93	WSW	.....	.....	2	.....	10	.....	W	0.417	10.60	Raining	Royal Observatory
Furnes	29.90	759.5	29.93	760.1	57.6	14.2	68	WNW	.....	.....	4	.....	8	.....	.....	0.039	1.0	.....	M. E. de Cae.
Maeseyck	29.75	755.7	29.88	759.0	57.0	13.9	85	WSW	.....	.....	2	.....	10	.....	.....	0.083	2.1	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

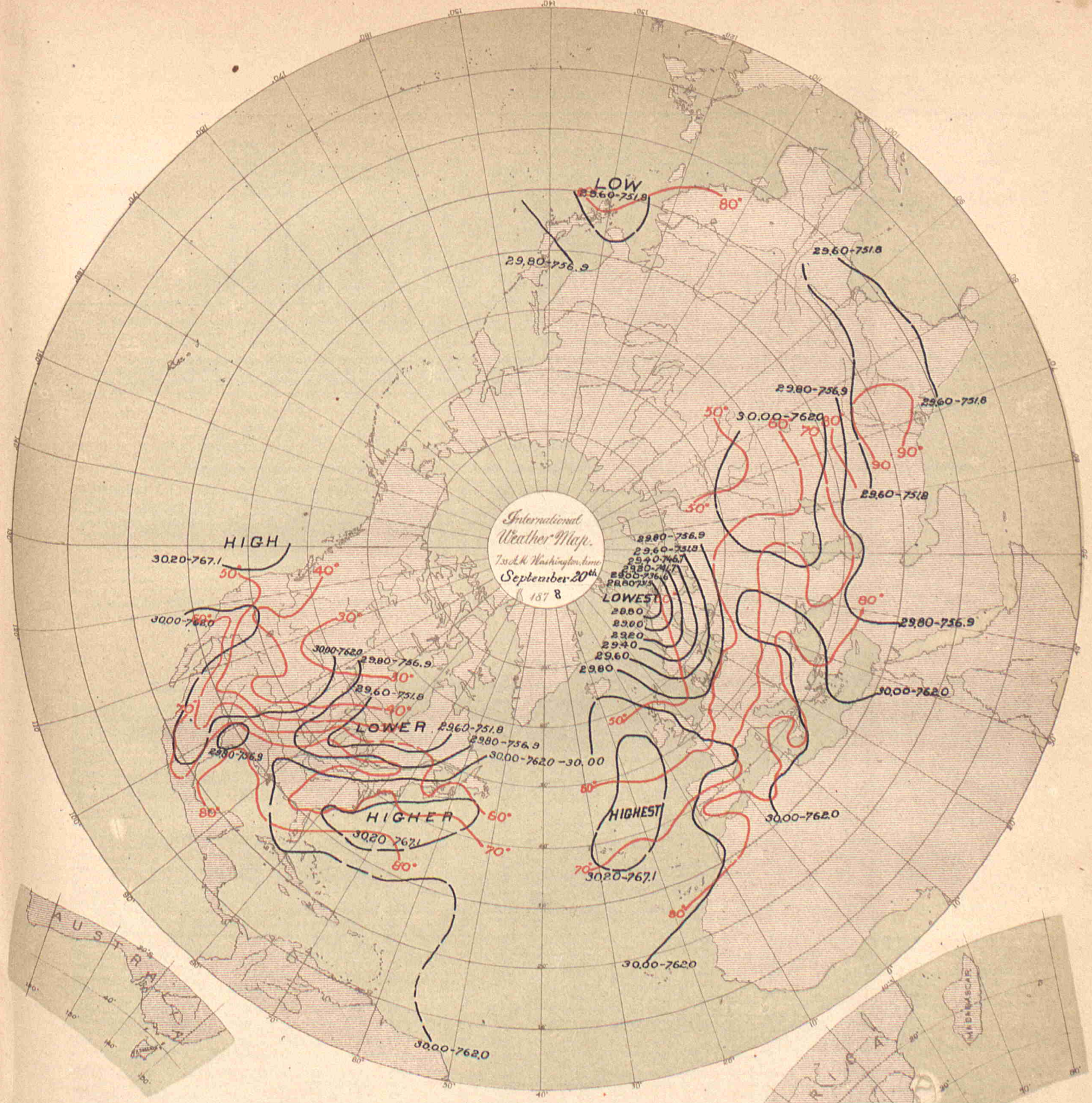
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.87	758.7	29.97	761.2	52.9	11.6	.....	NW	16	7.2	.....	.....	5	.....	.....	0	0	Blue sky	W. Boswell.
Ardrossan	29.98	761.5	30.00	762.0	57	13.9	.....	WSW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.10	764.5	53.0	11.7	.....	NW	5	2.2	.....	.....	10	.....	.....	.....	.....	Overcast.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.01	762.2	56.2	13.4	.....	NW	10	4.5	.....	.....	2	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.58	751.3	29.98	761.5	53.5	11.9	.....	NE	.....	.....	1	.....	10	.....	.....	0.36	9.1	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	84.5	29.2	.....	SE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.91	759.7	61.0	16.1	.....	N	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds....	H. Todd. [H. C.
Cardington	.....	.....	29.93	760.2	58.0	14.4	.....	N	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	John McLaren.
Chatham, School M. E.	29.80	756.9	29.92	760.0	55.2	12.9	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.50	723.9	29.97	761.2	52.0	11.1	.....	NW	.....	.....	4	.....	6	.....	.....	.....	.....	Showery	Alexander Watt.
Donaghadee	30.02	762.5	30.05	763.3	56	13.3	.....	NW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.90	759.4	29.92	760.0	57	13.9	.....	NNW	.....	.....	3	.....	3	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	29.97	761.2	56.5	13.6	.....	NW	2.6	1.2	.....	.....	7	.....	.....	.....	.....	D. clouds....	Thomas Mackereth.
Falmouth, Observatory	29.83	757.7	30.06	763.5	57.3	14.1	.....	NNW	.....	.....	5	.....	9	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	85.5	29.7	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	30.11	764.8	57	13.9	.....	NW	.....	.....	3	.....	8	.....	.....	.....	.....	Gloomy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.86	758.4	29.91	759.7	.....	.....	.....	NE	.....	.....	2	.....	6	.....	.....	.....	.....	Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.80	756.9	30.01	762.2	54.0	12.2	.....	WNW	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky.....	D. G. Maclean.
Great Yarmouth	29.87	758.7	29.88	758.9	57	13.9	.....	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.76	755.9	29.93	760.2	57.2	14.0	.....	NNW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.98	761.5	59	15.0	.....	WNW	.....	.....	4	.....	4	.....	.....	Blank	Blank	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.14	765.5	61	16.1	.....	NW	.....	.....	6	.....	4ck	.....	.....	0.35	8.9	Fine.....	M. P. Moyle.
Holyhead	30.01	762.2	30.06	763.5	55	12.8	.....	NNW	.....	.....	5	.....	2	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.72	754.9	30.01	762.2	59.0	15.0	.....	NW	.....	.....	6	.....	6	.....	.....	Blank	Blank	Squally.....	J. Fisher.
Kew, Observatory	29.89	759.2	29.93	760.2	56.1	13.4	.....	NNW	10	4.5	.....	.....	6	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	30.07	763.8	30.10	764.5	54	12.2	.....	NW	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast	George Mitchell.
Leicester, Museum	.....	.....	29.96	761.0	54.9	12.7	.....	NE	.....	.....	5	.....	9	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758 9	29.93	760.7	77	25.0	.....	NE	.....	.....	1	.....	4n	.....	.....	.....	.....	Gloomy.....	Sergt. Beckett.
Nairn	29.88	758.9	29.98	761.5	51	10.6	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.99	761.7	82.5	28.1	.....	NE	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.78	756.4	29.97	761.2	52.2	11.2	.....	NNW	.....	.....	2	.....	10k;d;n	.....	NNW	0.170	4.32	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.45	748.0	29.97	761.2	51.5	10.8	.....	NNE	.....	.....	2	.....	9	.....	.....	.....	.....	Raining.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.94	760.5	57	13.9	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	H.E. Bellamy.
Plymouth	29.93	760.2	30.00	762.0	58.6	14.8	.....	NW	.....	.....	4	.....	6	.....	.....	.....	.....	Showery.....	John Merrifield.
Roche's Point	30.10	764.5	30.14	765.5	56	13.3	.....	N	.....	.....	4	.....	5	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	29.89	759.2	30.05	763.3	57	13.9	.....	N	.....	.....	5	.....	3	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.93	760.2	49.1	9.5	.....	NW	21	9.4	.....	.....	6	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.95	760.7	78.4	25.8	.....	N	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.70	754.4	29.99	761.7	56.6	13.7	.....	NNE	.....	.....	2	.....	7	.....	.....	0	0	Overcast.....	W. F. Cooper.
Silloth, Rectory	29.99	761.7	30.02	762.5	56.7	13.7	57	NW	.....	.....	1	.....	2	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	29.59	751.6	30.00	762.0	54.0	12.2	.....	NW	.....	.....	1	.....	5	.....	.....	.....	.....	D clouds.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.71	754.6	29.93	760.2	57.1	13.9	.....	NW	.....	.....	1	.....	5	.....	.....	Blank	Blank	D. clouds....	Rev. C. H. Griffith, F.M.S
Thurso	.....	.....	29.94	760.5	52	11.1	.....	NNW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	30.10	764.5	61	16.1	.....	N	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	30.18	766.6	30.20	767.1	57.5	14.2	.....	NNW	14	6.3	.....	.....	4	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.22	742.2	60.0	15.6	83	N	.....	.....	5	.....	10kn	.....	.....	.....	.....	Raining.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	30.02	762.5	30.22	767.5	71.8	22.1	65	SE	28.0	12.5	.....	0	2	.....	SE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.55	750.6	29.64	752.8	65.7	18.7	49	WSW	9	4.0	.....	.....	6	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle. N. 35° 40′, W. 13° 40′	5	NNE	D. clouds.....	Capt. W. Waring.
Barque Margaret Smith, N. 22° 35′, W. 34° 25′	1	6	D. clouds.....	Capt. D. W. A. Quaile.
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 40° 20′, W 53° 35′	5	SSE	D. clouds.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points: the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity Miles per hour.	WIND. Velocity Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.27	667.2	.....	.....	68.0	20.0	95	SE	.....	.....	1	.....	10s	.....	.....	0	0	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.67	753.6	29.72	754.8	56.5	13.6	67	W	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....
Fanöe	29.69	754.1	29.71	754.6	57.9	14.4	71	W	.....	.....	4	.....	5	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farõe)	29.86	757.0	29.84	757.9	45.9	7.7	62	NW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....
Vestervig	29.48	748.7	29.65	753.0	55.0	12.8	75	WNW	.....	.....	4	.....	3	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.46	748.3	30.01	762.3	59.4	15.2	83	SW	.....	.....	1	.....	10	.....	NW	0.020	0.5	Raining	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.89	759.2	29.97	761.2	70.9	21.6	89	N	.....	.....	1	.....	10	.....	.....	.....	.....	Lightly cov.	M. Giraud, Director.
†Bar-sur-Seine	29.40	746.8	29.95	760.6	61.7	16.5	89	S	.....	.....	2	.....	10	.....	.....	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.67	753.6	29.95	760.8	55.4	13.0	79	NW	.....	.....	2	.....	10	.....	NW	0.128	3.25	Covered	Frere Eugene Marie, Director.
Besançon	29.13	739.9	30.01	762.3	64.4	18	60	SSW	.....	.....	2	.....	2	.....	SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.45	748.1	30.00	761.9	64.4	18	80	SW	.....	.....	2	.....	5km	.....	SW	0.04	1.	Raining	A. Wagner, Director.
Brest, Naval Observatory	29.80	756.8	30.04	763.0	61.9	16.6	64	N	.....	.....	3	.....	4k	.....	N	0.305	7.75	.....	The Staff.
Carcassonne, Normal School	29.62	752.4	30.03	762.7	66.2	19	53	W	.....	.....	1	.....	8	NE	E	0	0	Very cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.41	747.1	29.97	761.2	62.4	16.9	77	W	.....	.....	2	.....	5	S	S	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.61	752.2	29.93	760.2	59.4	15.2	80	SW	.....	.....	4	.....	8	SW	SW	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.67	728.2	29.98	761.6	67.6	19.8	42	W	.....	.....	1	.....	5	.....	W	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.10	739.2	29.98	761.4	58.3	14.6	61	W	.....	.....	3	.....	5km	.....	W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.86	733.1	30.00	762.1	68.0	20.0	33	W	.....	.....	2	.....	5	W	.....	0	0	½ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.67	753.5	29.97	761.2	59.0	15	75	NW	.....	.....	3	.....	8	.....	W	0.069	1.75	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.14	740.1	30.04	763.1	60.8	16	89	NW	.....	.....	2	.....	6	.....	NW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.06	763.4	30.09	764.2	65.1	18.4	86	N	.....	.....	1	.....	10	N	N	0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.94	735.0	29.97	761.2	58.6	14.8	63	W	.....	.....	3	.....	10kn	.....	SW	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.73	755.2	29.95	760.7	73.0	22.8	69	N	.....	.....	1	.....	.....	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.97	735.7	30.01	762.2	66.2	19	41	NE	.....	.....	1	.....	1	.....	NE	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.14	638.5	.....	.....	42.4	5.8	82	W	.....	.....	6	.....	8	.....	W	0	0	Very cloudy	Alluard, Director.
Rochefort, Naval Obs'y	30.02	762.5	30.05	763.3	65.3	18.5	85	W	.....	.....	4	.....	10	W	W	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.86	758.5	29.95	760.7	59.4	15.2	57	WNW	.....	.....	1	.....	5	.....	W	0.441	11.2	Cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.01	762.2	60.6	15.9	79	NW	.....	.....	4	.....	1	.....	NW	0.157	3.98	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.75	755.7	29.92	759.9	60.8	16.0	62	W	.....	.....	2	.....	6	.....	WSW	0.008	0.2	.....	E. Renou.
Tarbes, Normal School	29.13	739.9	30.19	766.8	64.4	18	80	SSW	.....	.....	1	.....	10	.....	.....	0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.86	758.5	29.89	759.2	82.8	28.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchès.
Lyons	.....	.....	30.01	762.3	65.3	18.5	41	.....	.....	.....	.....	.....	4	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.94	760.4	68.9	20.5	39	W	.....	.....	2–3	.....	7	.....	.....	0	0	Cloudy	The Staff.
Mont-Louis	24.89	632.3	30.21	767.3	52.7	11.5	67	SSE	.....	.....	2	.....	5	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	29.91	759.7	74.8	23.8	78	S	.....	.....	2	.....	4	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.64	752.8	29.91	759.8	60.1	15.6	63	WNW	.....	.....	2	.....	7	.....	WNW	0.004	0.1	.....	Marié Davy, Director
Perpignan	.....	.....	30.02	762.4	66.6	19.2	58	NW	11.2	5.00	.....	.....	10	.....	NW	0.087	2.2	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.59	573.7	.....	.....	41.4	5.2	.....	SW	.....	.....	2	.....	10	.....	.....	0.047	1.2	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.39	746.4	30.11	764.8	65.7	18.7	45	NNW	.....	.....	3	.....	4	.....	.....	0	0	.....	The Staff.
Tours	29.80	757.0	30.00	762.0	59.4	15.2	78	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	C. Marquet.
Versailles	.....	.....	29.94	760.5	57.2	14.0	65	NW	.....	.....	3	.....	10	.....	.....	0.094	2.41	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.68	751.3	29.91	759.0	73.0	22.8	92	NW	14.3	6.4	.....	.....	8	.....	.....	0.878	22.3	Almost clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.6 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône. †Observation taken 7 minutes late.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.03	737.4	29 87	758.7	60.8	16.0	57	W			3		4	W		0	0		Prof. Dr. Hoh.
Berlin	29.72	755.0	29.89	759.3	64.6	18.1	48	S			1		4			0	0		Prof. Arndt.
Breslau	29.46	748.2	29.99	761.7	64.4	18.0	37	SSW			1		4			0	0		Royal University Obs'y
Carlsruhe	29.52	749.9	29.94	760.5	64.0	17.8	50	SW			2		8			0	0		Albert Senz.
Cassel	29.29	744.0	29.90	759.4	64.0	17.8	54	SW			4		8	W		0.011	0.28		Dr. H. Möhl.
Crefeld	29.68	753.9	29.84	758.0	60.4	15.8	67	SW			5		9km			0	0		Director Lose.
Emden	29.60	757.0	29.84	757.9	56.3	13.5	90	W			3		8			0.008	0.2		Prof. Prestel.
Frankfort on the Main	29.59	751.5	29.95	760.6	64.4	18		SSW			2		5			0	0		Physical Society.
Friedrichshafen	28.57	725.7	29.99	761.8	59.9	15.5	70	SW			2		8	W		0.177	4.5		M. Wilhelm.
Hamburg	29.74	755.4	29.81	757.2	67.2	14.0	82	WSW			3		10n			0.110	2.8	Light rain	Captain F. Hegemann.
Kiel	29.76	755.9	29.78	756.3	55.0	12.8	88	SW			2		10			0.486	12.36		Prof. G. Karsten.
Königsberg, (Prussia)	29.83	757.6	29.91	759.7	62.2	16.8	47	SW			5		2			0	0		Prof. E. Luther.
Köslin			29.84	758.0	60.8	16.0		SW			4		2			0	0		H. Müller.
Leipsic, Observatory	29.51	749.6	29.93	760.1	64.8	18.2	46	SW			3		8	WSW		0	0		Prof. Bruhns.
Memel, Naval School	29.83	757.7	29.88	758.9	59.9	15.5	61	SW			6		7ck;s	SW					Reinbrecht and Skalweit.
Neufahrwasser	29.88	759.0	29.90	759.4	64.0	17.8	41	SW			5		6			0	0		A. Lothes.
Posen	29.69	754.1	29.97	761.2	64.6	18.1	41	SW			8		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.45	748.0	29.99	761.7	64.9	18.3	47	SW			2		9	SW		0	0		Astronomical Observatory.
Stuttgart	29.01	736.9	29.93	760.3	63.5	17.5	43	NW			1		5	W		0.016	0.4		Prof. Schoder.
Treves, (Trier)	29.37	746.1	29.89	759.3	59.9	15.5	64	SW			7		10			0.163	4.13		Prof. Flesch.
Weissenburg, (Bavaria)	28.48	723.4	29.95	760.8	59.7	15.4	58	NW	0.7	0.3			7ck		SW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.79	756.6	29.83	757.6	60.6	15.9	83	SSW			4		8			0.390	9.9		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.5	29.97	761.1	81.1	27.3		NE			2.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.50	749.4	29.55	750.6	87.0	30.6	75	WSW	27?	12.1?			8			0	0	D. clouds	
Deesa	29.12	739.7	29.58	751.4	92.2	33.4	54	NE					0			0	0	Blue sky	
Bombay	29.58	751.4	29.62	752.4	79.9	26.6	97	W	16	7.2			9	WSW	W	0.57	14.5	Overcast	
Poona	27.65	702.4	29.75	755.7	75.8	24.3	86	W					10		W	0	0	Overcast	
Lahore	28.81	731.7	29.62	749.9	93.7	34.3	48	Calm	1.9	0.8			0			0	0	Blue sky	
Belgaum	27.18	690.4	29.71	754.7	73.9	23.3	92	W	11	4.9			9		W	0.35	8.9	Showery	
Roorkee	28.67	728.1	29.54	750.3	88.8	31.6	64	Calm	2	0.9			1			0	0		
Agra	29.01	736.7	29.56	750.8	87.7	30.9	62	N					2			0	0		
Nagpur	28.55	725.2	29.58	751.3	83.6	28.7	78	Calm	4.6	2.1			5		E	0.01	0.3	D. clouds	
Lucknow																			
Allahabad	29.25	742.9	29.55	750.7	80.8	27.1	95	Calm	0.4	0.2			9			1.18	30.0	D. clouds	
Patna	29.35	745.6	29.53	750.1	86.8	30.4	82	NE	1.0	0.4			10	NE	E	0	0	Lightning	
Hazaribagh	27.56	700.0	29.53	750.2	83.0	28.3	80	N	3.6	1.6			9		N	0.10	2.5	Thunder-storm	
Cuttack	29.60	749.3	29.58	751.4	82.0	27.8	79	W	1.4	0.6			3			0.17	4.3	D. clouds	
Calcutta (Alipore)	29.56	750.8	29.58	751.3	83.3	28.5	85	S	3.0	1.3			10			0	0	Overcast	
Goalpara	29.17	740.9	29.55	750.7	81.7	27.6	79	SSW	2.1	0.9			3			0	0	D. clouds	
Chittagong	29.48	748.7	29.57	751.0	86.1	30.1	76	Calm	1.4	0.6			2			0	0	Misty	
Sibsagar	29.22	742.2	29.55	750.5	89.8	32.1	74	ENE	1.8	0.8			2			0	0	Blue sky	
Jubbulpore	28.25	717.5	29.60	751.8	81.6	27.6	88	E	4.4	2.0			10			0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.52	749.9	29.92	760.0	74.7	23.7	61		0.7	0.3	.....	.....	7	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.79	756.7	29.90	759.4	75.4	24.1	65	SE	4.9	2.2	.....	.....	6	ENE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.79	756.6	29.89	759.3	76.5	24.7	60	E	2.5	1.1	.....	.....	5	S	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.68	726.0	29.87	758.6	69.8	21.0	73	SW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.37	746.0	29.87	758.7	73.0	22.8	75	ESE	.....	.....	2	.....	10	S	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.98	736.1	29.86	758.4	71.8	22.1	65	NW	3.1	1.4	.....	.....	5	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.99	710.9	29.84	758.0	71.2	21.8	63	N	.....	.....	4	.....	3	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.68	753.8	29.89	759.3	76.5	24.7	65	SSE	.....	.....	2	.....	7	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.74	755.4	29.91	759.6	75.4	24.1	70	SE	.....	.....	4	.....	8	SW	.....	0.492	12.5	.....	Prof. G. M. Garibaldi.
Parma	29.56	750.9	29.87	758.7	78.3	25.7	46	ENE	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.66	753.3	29.91	759.6	79.7	26.5	49	NW	.....	.....	2	.....	7	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.82	757.3	29.89	759.3	76.3	24.6	75	WSW	13.0	5.8	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.84	757.8	29.88	759.0	77.0	25.0	70	NE	.....	.....	.....	.....	5	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.41	721.5	29.92	759.9	70.9	21.6	62	SW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.78	756.3	29.95	760.6	79.5	26.4	53	SSW	8.7	3.9	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.78	756.3	29.97	761.2	80.8	27.1	38	SSE	.....	.....	2	.....	4	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.72	755.0	29.97	761.3	75.0	23.9	59	NE	4.3	1.9	.....	.....	2	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.73	755.1	29.91	759.8	77.2	25.1	66	SE	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.10	739.1	29.96	760.9	81.7	27.6	68	SW	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.72	754.8	29.97	761.1	75.6	24.2	71	NE	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.93	760.2	30.00	762.0	78.3	25.7	64	SE	4.3	1.9	.....	.....	6	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.45	747.9	30.00	762.0	77.9	25.5	70	ESE	1.3	0.6	.....	.....	4	S	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.29	743.9	29.49	749.0	80.1	26.7	77	S	27.4	12.2	.....	.....	7ks;s	.....	S	0.453	11.51	Cloudy	
Tokei (Yeddo) Observatory.	29.08	753.9	29.75	755.6	76.9	24.9	98	S	12.1	5.4	.....	.....	10ck;s	.....	.....	0.765	19.43	Cloudy.....	I. Arai, Director.
Tokei (Yeddo) University..	29.64	752.8	29.73	755.2	77	25.0	100	SSE	8	3.6	.....	.....	10n	.....	.....	0.99	25.15	Squally	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	67.1	19.5	90	N	.....	.....	1	0	10kn	.....	E	0.032	0.8	Covered.. ...	P. Ceballos.
Guadalajara	25.07	636.7	30.02	762.5	59.0	15.0	76	.....	.....	.....	.....	0	10kn	.....	NW	0	0	Covered.....	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.48	620.6	29.96	761.1	63.0	17.2	83	NW	.....	.....	1	2c	0	Calm	.....	0	0	Clear.....	Prof. M. Leal.
Mexico	23.13	587.4	30.09	764.3	59.9	15.5	86	Calm	0	0	.....	0	7k	.....	NE	0.03	0.8	Cloudy.....	Central Observatory.
Fabellon, (Aguascalte)	.....	.....	.....	.....	67 7	14.3	78	Calm	.....	.....	0	3c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.36	593.3	29.94	760.4	59.7	15.4	90	NW	1.6	0.7	.....	5n	5n	NW	Calm	0.48	12.14	Covered.....	Prof. B. Gonzalez.
Tlacotalpam	29.84	757.9	29.85	758.2	78.1	25.6	78	SE	.....	.....	1	9ck	0	SW	.....	.....	.....	Misty	M. M. Cházaro.
San Luis Potosi	24.24	615.1	30.14	765.6	58.0	14.4	74	ENE	3.1	0.4	.....	4	2	W	E	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.89	759.3	29.92	760.0	79.7	26.5	84	Calm	0	0	.....	0	1s	.....	.....	0.016	0.4	Foggy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	57.2	14.0	79	NE	.....	.....	1	0	4	.....	NE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute).	23.23	590.2	29.99	761.9	59.0	15.0	83	S	0	0	.....	.....	10	.....	E	0.615	15.60	Covered.....	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.36	720.2	29.98	761.4	78.8	26.0	87	E	0.8	0.4	.....	0	6	.....	E	0	0	⅜ cloudy.....	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Fabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.87	758.7	29.87	758.7	60.4	15.8	.....	NW	.....	.....	4	.....	.....	.....	.....	0.398	10.1	.....	
Groningen	29.73	755.2	29.79	756.6	54.9	12.7	.....	SW	.....	.....	2	.....	.....	.....	.....	0.217	5.5	.....	
Helder	29.80	757.0	29.80	757.0	57.6	14.2	.....	NW	.....	.....	4	.....	.....	.....	.....	0.354	9.0	.....	
Hellevoetsluis	29.80	756.8	29.80	756.8	54.5	12.5	98	NNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.78	756.4	29.83	757.6	57.4	14.1	80	W	.....	.....	2	.....	10	.....	.....	0.106	2.7	Dull.....	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.51	749.6	29.57	751.0	45.3	7.4	80	NW	15.9	7.1	.....	.....	4	.....	.....	0.201	5.1	Raining	
Bröno	29.11	739.3	29.15	740.3	47.3	8.5	66	W	27	12	.....	.....	9	.....	.....	0.449	11.4	Light rain...	
Christiania	29.28	743.6	29.42	747.2	58.1	14.5	53	WSW	7	3	.....	.....	8	.....	.....	0	0	.....	
Tromsö	28.61	726.8	28.66	727.9	47.5	8.6	89	SSW	9	4	.....	.....	10	.....	.....	0.675	14.6	... .	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.07	763.6	30.25	768.3	74.5	23.6	81	ENE	1.8	0.8	.....	.....	1	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.91	784.4	29.89	759.1	83.7	28.7	39	SSW	7.4	3.3	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.5	30.07	763.7	76.1	24.5	68	SW	9.8	4.4	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.57	751.1	29.92	759.9	76.3	24.6	56	SSE	4.9	2.2	.....	.....	3	WSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.18	766.6	30.25	768.3	79.9	26.6	63	S	0.7	0.3	.....	.....	6	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 9° 59′, E. 13°	.....	.....	30.08	763.9	74.3	23.5	.....	W	.....	.....	4	.....	2	.....	W	2	W	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	30.02	762.5	78.1	25.6	.....	WNW	.....	.....	2	.....	10	.....	W	1	.....	Foggy	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.95	760.6	79.2	26.2	.....	ENE	.....	.....	2	.....	10	.....	.....	2	S	Hazy	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.70	754.3	80.6	27.0	.....	N	.....	.....	1	.....	0	.....	.....	0	.....	Blue sky	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.58	751.4	30.00	761.9	63.3	17.4	51	SW	4	2	.....	.....	8cs;ks	.....	.....	.....	.....	Solar corona	Astronomical Obs.
Wilna	29.58	751.4	30.00	761.9	59.4	15.2	45	SW	2	1	.....	.....	3	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.55	750.6	29.79	756.6	57.4	14.1	61	SSW	11	5	.....	.....	9ck;s	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.72	754.9	29.74	755.3	59.2	15.1	67	SW	13	6	.....	.....	6kn	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.37	746.1	29.99	761.7	70.5	21.4	56	Calm	0	0	.....	.....	1k	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.97	761.2	30.04	763.0	80.2	26.8	47	Calm	0	0	.....	.....	4ks	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.96	761.0	29.98	761.5	74.3	23.5	59	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.46	748.2	30.00	761.9	60.8	16.0	87	S	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.64?	752.9?	29.84?	757.9?	77.5	25.3	40	ENE	9	4	.....	.....	3k	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.60	751.9	29.62	752.4	58.8	14.9	62	SSW	13	6	.....	.....	4ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.56	725.4	29.94	760.5	68.4	20.2	67	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.15	765.9	30.07	763.8	72.7	22.6	44	E	7	3	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.51	749.5	29.97	761.1	70.0	21.1	49	WSW	7	3	.....	.....	6ks	.....	.....	.....	.....	Light clouds	Cand. Fatjanow.
Kasan	29.78	755.2	30.00	761.9	65.5	18.6	61	SSE	9	4	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.09	738.9	30.02	762.6	56.8	13.8	82	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.71	754.7	29.94	760.5	66.0	18.9	45	NE	9	4	.....	.....	10k	.....	.....	.....	.....	.....	
Tashkend	28.38	720.9	30.04	763.1	68.7	20.4	72	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.45	747.9	29.97	761.2	50.7	10.4	91	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.54	750.2	29.83	757.6	45.9	7.7	93	E	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.62	752.3	29.76	755.9	75.2	24.0	62	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.88	758.9	29.98	761.6	68.0	20	85	E	2.4	1.06	.....	.....	10	.....	.....	1.622	41.20	Covered	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.06	763.5	30.11	764 9	68.7	20.4	71	W	1.6	0.71	.....	2	6	N	.....	0.236	6.0	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.13	689.2	.....	.....	63.3	17.4	70	NE	11.6	5.19	.....	.....	8	.....	.....	0.020	0.5	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.73	704.7	29.89	759.2	74.3	23.5	62	NE	8.9	4.00	.....	0	10	.....	.....	Inap.	Inap.	Covered	The Staff.
Murcia, Met. Obs'y	29.76	755.9	29.91	759.6	83.8	28.8	62	ENE	4.4	1.97	.....	2	6	.....	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.19	741.4	30.07	763.8	66.4	19.1	60	NE	19.9	8.89	.....	.....	4	.....	.....	0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.6	30.01	762.2	78.8	26.0	83	E	8.5	3.8	.....	0	0	.....	.....	0.020	0.5	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.83	757.7	29.93	760.1	76.8	24.9	75	S	22.3	9.9	.....	0	4	.....	SW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.87	758.6	29.96	760.9	83.5	28.6	89	SE	2.8	1.23	.....	8c	2k	S	S	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.12	739.7	29.16	740.7	52.6	11.4	.....	S	.....	.....	6	.....	5	.....	.....	0.236	6.0	.....	
Umea	29.17	741.0	29.22	742.3	54.3	12.4	57	W	.....	.....	6	.....	6	.....	.....	0	0	.....	
Hernosand	29.21	742.0	29.26	743.3	56.8	13.8	39	W	.....	.....	4	.....	5	.....	.....	0	0	.....	
Stockholm	29.30	744.2	29.48	748.7	54.3	12.4	95	WSW	.....	.....	4	.....	5	.....	.....	0.102	2.6	.....	
Wisby	29.59	751.5	29.65	753.0	57.9	14.4	63	W	.....	.....	8	.....	3	.....	.....	0.047	1.2	.....	
Sub-Series.																			
Upsala	29.34	745.3	29.42	747.2	55.2	12.9	68	SW	18.6	8.3	.....	.....	7	.....	SW	0.195	4.96	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.9	29.93	761.4	64.2	17.9	45	S	.....	.....	1	.....	5	.....	.....	0	0	Vapory.....	The Observatory.
Zurich	28.39	721.2	30.01	762.2	60.4	15.8	61	W	.....	.....	2	.....	8	.....	.....	0	0	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.0 mm.; Thermometer, +0.4 cent.; Relative Humidity, —19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.01	762.3	72.3	22.4	64	NNE	9	4.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.08	764.0	70.0	21.1	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.70	754.4	29.82	757.4	86.9	30.5	58	W	.....	.....	1	.....	2k	.....	W	0.03	0.8	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.56	750.8	29.84	757.9	70	24.4	.....	SW	5	2.2	.....	2c	0	SW	.....	0.27	6.9	Clear.....	W. R. Bigg.
*Chatham, N B	29.90	759.4	29.96	761.0	59	15.0	83	S	11	4.9	.....	8k	2ks	SW	SW	0	0	Fair.....	G. A. Blair.
Charlottetown, P. E. Island	30.05	763.3	30.09	764.3	63	17.2	80	SW	12	5.4	.....	0	5ks	.....	SW	0	0	Fair.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.62	752.3	29.80	756.9	71.2	21.8	71	W	.....	.....	1	2cs	0	NW	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	29.70	754.4	29.85	758.2	56.3	13.5	96	E	.....	.....	1	.....	.....	.....	.....	0.14	3.6	Drizzling.....	H. A. Johnson.
Esquimault, B. C	30.01	762.2	30.06	763.5	49.3	9.6	93	Calm	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	29.65	753.1	29.67	753.6	64	17.8	76	S	36	16.1	.....	8k	2s	W	W	0.09	2.3	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.00	762.0	30.07	763.8	67.0	18.9	82	SW	6	2.7	.....	ck	0	.....	.....	0	0	Clear.....	Prof. Harrison.
*Fort Garry Manitoba	29.00	736.6	29.84	757.9	33	0.6	97	W	6	2.7	.....	2c	2s	Calm	Calm	0	0	Fair.....	James Stewart.
Granton, Ontario	28.70	729.0	29.76	755.9	65	18.3	100	SW	.....	.....	2	0	2ks	.....	.....	0.46	11.7	Fair.....	James Grant.
*Halifax, N. S	30.00	762.0	30.13	765.3	63	17.2	80	S	3	1.3	.....	.....	10n	.....	S	0	0	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.47	748.5	29.82	757.4	69.7	20.9	83	SW	.....	.....	4	4c	0	W	.....	0.18	4.6	Fair.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.12	765.0	30.15	765.8	54	12.2	70	E	.....	.....	1	0	0	.....	.....	0	0	Clear.....	E. Weedon.
*Kingston, Ontario	29.50	749.3	29.82	757.4	69	20.6	91	S	11	4.9	.....	2c	Sm'c	Calm	S	0.08	2.0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.10	764.5	30.14	765.5	65.0	18.3	65	W	10	4.5	.....	4c	0	W	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	29.64	752.8	29.83	757.7	72	22.2	68	S	15	6.7	.....	2cs	0	.....	.....	0	0	Fair.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.01	736.8	29.67	753.6	66	18.9	80	S	18	8.0	.....	0	0	.....	.....	0.83	21.1	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.09	738.9	29.81	757.2	68.7	20.4	70	SW	.....	.....	1	7k	0	.....	.....	0.41	10.4	Fine.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.18	741.2	29.85	758.2	64	17.8	94	SW	7	3.1	.....	2ck	0	W	.....	0.05	1.3	Fair.....	H. Morgan.
Port Hastings, N. S	30.10	764.5	30.15	765.8	63.4	17.4	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.20	741.7	29.82	757.4	70	21.1	83	SW	8	3.6	.....	.....	8ks	.....	S	Inap.	Inap.	Cloudy.....	M. Payne.
*Quebec, Quebec	29.61	749.5	29.82	757.4	64	17.8	94	NW	.....	.....	.....	.....	10n	.....	NW	0.31	7.9	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.27	743.4	29.71	754.6	65	18.3	92	Calm	0	0	.....	.....	8s	.....	SW	0.27	6.9	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	30.03	762.7	30.08	764.0	55	12.8	90	SW	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy.....	Dr. Gove.
St. John, N. B	29.96	761.0	30.13	765.3	54	12.2	93	SW	18	8.8	.....	.....	10s	.....	.....	0	0	Cloudy.....	G. Murdock, C. E.
*Saugeen, Ontario	28.97	735.8	29.65	753.1	69	20.6	79	S	21	9.4	.....	6cs	0	.....	.....	1.15	29.2	Clear.....	K. Stewart.
Stayner, Ontario	28 96	735.6	29.70	754.4	71	21.7	79	SE	8	3.6	.....	5ck	0	W	.....	0.10	4.8	Fair.....	R. J. Cole.
Stratford, Ontario	28.63	724.6	29.75	755.6	66.4	19.1	85	SW	18	8.0	.....	2ck	2s	SW	.....	0.101	4.86	Fair.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.15	765.8	30.18	766.6	61	16.1	77	SW	5	2.2	.....	2c	0	.....	.....	0	0	Clear.....	T. C. Hill.
*Toronto, Ontario	29.45	748.0	29.81	757.2	67	19.4	86	SW	9	4.0	.....	2c	0	W	.....	0.10	2.5	Clear.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	55.0	12.8	.....	E	.....	.....	.....	0	1k	.....	.....	0	0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	30.02	762.5	66	18.9	84	S	6	2.7	.....	1c	Haze	Calm	.....	0	0	Clear	
Alpena, Michigan	28.93	734.8	29.53	750.0	65	18.3	89	SW	10	4.5	.....	8cs	0	W	.....	1.02	25.9	Fair	
Atlantic City, New Jersey	30.08	764.0	30.09	764.3	73	22.8	90	S	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Augusta, Georgia	29.99	761.7	30.17	766.3	66	18.9	89	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Baltimore, Maryland	30.04	763.0	30.08	764.0	67	19.4	84	S	8	1.3	.....	2c	Haze	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.08	764.0	30.10	764.5	76	24.4	77	SW	15	6.7	.....	0	Haze	.....	Calm	0	0	Clear	
Bismarck, Dakota	28.19	716.0	30.05	763.3	38	3.3	72	W	12	5.4	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Boerne, Texas	28.48	723.4	.....	.....	74	23.3	95	SE	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.19	690 6	30.15	765.8	48	8.9	56	S	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Boston, Massachusetts	29.94	760 5	30.09	764.3	66	18.9	95	SW	9	4.0	.....	.....	10s;fg	.....	SW;Calm	0	0	Cloudy	
Brackettville, Texas	28.79	731.3	29 77	756.1	75	23.9	86	E	2	0.9	.....	5cs	0	S	.....	0	0	Fair	
Breckenridge, Minnesota	28.89	733.8	29.90	759.4	40	4.4	91	W	8	3.6	.....	10k	0	NW	.....	0	0	Fair	
Brownsville, Texas	29.81	757.2	29.88	758.9	76	24.4	95	Calm	0	0	.....	0	0	.....	.....	0	0	Cloudy	
Buffalo, New York	29.17	740.9	29.84	757.9	70	21.1	70	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.72	754.9	29.97	761.2	69	20.6	70	S	12	5.4	.....	2c	2s;hz	W	W; Calm	0	0	Fair	
Cairo, Illinois	29.43	747.5	29.80	756.9	72	22.2	71	S	14	6.3	.....	.....	10s	.....	S	0	0	Cloudy	
Camp Apache, Arizona	.....	.....	.....	.....	44	6.7	67	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.26	641.6	30.06	763.5	54	12.2	32	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.86	682.2	30.35	770.9	47	8.3	62	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	40	4.4	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.19	766.8	30.20	767.1	72	22.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.11	764.8	30.14	765.5	67	19.4	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	76	24.4	77	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.09	764.3	30.11	764.8	73	22.8	85	S	20	8.9	.....	2ck	Haze	W	Calm	0	0	Fair	
Castroville, Texas	29.12	739.6	29.79	756.7	77	25.0	86	Calm	0	0	.....	0	5s	.....	SE	0	0	Fair	
Charleston, South Carolina	30.14	765.5	30.21	767.3	72	22.2	90	E	3	1.3	.....	1k	Sm'e	E	Calm	0	0	Clear	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	40	4.4	82	Calm	0	0	.....	0	8s	.....	SW	0.52	13.2	Cloudy	
Chicago, Illinois	28.90	734.0	29.54	750.3	72	22.2	68	SW	16	7.2	.....	10cs	0	Calm	.....	0	0	Cloudy	
Cincinnati Ohio	29.25	742.9	29.87	758.7	71	21.7	64	S	8	3.6	.....	6c;ck	0	W;SW	.....	0	0	Fair	
Cleveland, Ohio	29.17	740.9	29.86	758.4	70	21.1	66	SE	10	4.5	.....	5c	0	W	.....	0	0	Fair	
Coleman City, Texas	28.20	716.3	29.83	757.7	63	17.2	67	N	24	10.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Columbus, Ohio	29.07	738.4	29.88	758.9	66	18.9	78	S	8	3.6	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	28.09	712.7	29.69	754.1	65	18.3	63	N	4	1.8	.....	0	10s	.....	N	0.05	1.3	Cloudy	
Corsicana, Texas	29.44	747.8	29.89	759.2	75	23.9	90	S	6	2.7	.....	Haze	5s	Calm	Calm	0.04	1.0	Fair	
Davenport, Iowa	29.01	736.8	29.62	752.3	63	17.2	89	W	15	6.7	.....	.....	10s	.....	W	0.68	17.3	Threatening	
Decatur, Texas	28.83	732.3	29.99	761.7	59	15.0	82	N	18	8.0	.....	0	1s	.....	.....	Inap.	Inap.	Clear	
Denison, Texas	29.13	739.9	29.92	760.0	59	15.0	94	NW	10	4.5	.....	10k	0	NW	.....	0.27	6.9	Cloudy	
Denver, Colorado	24.91	632.7	30.13	765.3	42	5.6	74	S	6	2.7	.....	0	5s	.....	SW	0.61	15.5	Fair	
Des Moines, Iowa	28.90	735.6	29.81	757.2	58	14.4	76	NW	7	3.1	.....	.....	10n	.....	NW	1.23	31.2	Light rain	
Detroit, Michigan	29.10	739.1	29.72	754.9	69	20.6	70	SW	14	6.3	.....	5k	5s	SW	SW	0	0	Cloudy	
Dodge City, Kansas	27.52	699.0	29.87	758.7	40	4.4	91	NW	16	7.2	.....	0	0	.....	.....	0.02	0.5	Clear	
Dubuque, Iowa	29.00	736.6	29.68	753.9	51	10.6	86	NW	10	4.5	.....	.....	10n	.....	NW	2.43	61.7	Light rain	
Duluth, Minnesota	29.09	738.9	29.77	756.1	43	6.1	75	NW	8	1.3	.....	.....	10s	.....	NW	0.05	1.3	Cloudy	
Eagle Pass, Texas	29.15	740.4	29.86	758.4	74	23.3	95	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Eastport, Maine	30.03	762.7	30.10	764.5	56	13.3	87	S	12	5.4	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
El Paso, Texas	.....	.....	.....	.....	73	22.8	26	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.17	740.9	29.85	758.2	70	21.1	70	S	11	4.9	.....	2c	0	Calm	.....	0	0	Fair	
Escanaba, Michigan	28.92	734.6	29.56	750.8	51	10.6	100	N	16	7.2	.....	.....	10n	.....	Calm	1.67	42.4	Heavy rain	
Florence, Arizona	28.49	723.6	30.09	764.3	60	15.6	44	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.61	650.5	29.66	753.4	47	8.3	62	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.26	641.6	30.22	767.6	64	17.8	26	N	2	0.9	.....	2k	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.40	746.7	29.92	760.0	60	15.6	82	W	16	7.2	.....	.....	10s	.....	W	0.72	18.3	Cloudy	
Fort Griffin, Texas	28.79	731.3	30.06	763.5	55	12.8	68	N	16	7.2	.....	0	2s	.....	Calm	Inap.	Inap.	Clear	
Fort McKavett, Texas	27.76	705.1	29.62	752.3	69	20.6	80	NW	2	0.9	.....	.....	10s	.....	NW	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.82	732.0	29.94	760.5	52	11.1	66	N	16	7.2	.....	0	0	.....	.....	0.17	4.3	Clear	
Fredericksburg, Texas	28.22	716.8	29.70	754.4	78	25.6	78	N	2	0.9	.....	0	5ks	.....	Calm	0	0	Fair	
Galveston, Texas	29.88	758.9	29.93	760.2	79	26.1	95	S	6	2.7	.....	.....	10ks	.....	S	0.05	1.3	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	28.94	735.1	29.55	750.6	69	20.6	85	S	17	7.6	.....	.....	10s	.....	Calm	1.39	35.3	Cloudy	
Indianapolis, Indiana	29.04	737.6	29.77	756.1	70	21.1	66	SE	10	4.5	.....	0	8s	.....	SW	0	0	Cloudy	
Indianola, Texas	29.88	758.9	29.91	759.7	80	26.7	91	S	4	1.8	.....	1k	0	Calm	.....	Inap.	Inap.	Clear	
Jacksboro, Texas	28.88	733.5	30.00	762.0	57	13.9	69	N	16	7.2	.....	0	2ks	.....	Calm	0	0	Fair	
Jacksonville, Florida	30.11	764.8	30.14	765.5	74	23.3	81	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.04	737.6	29.62	752.3	64	17.8	89	NW	7	3.1	.....	.....	10s	.....	W	0.35	8.9	Cloudy	
Key West, Florida	29.99	761.7	30.02	762.5	81	27.2	78	E	9	4.0	.....	1cs	1ks	Calm	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.16	766.1	30.18	766.6	72	22.2	90	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.12	739.6	30.11	764.8	61	16.1	82	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
La Crosse, Wisconsin	28.93	734.8	29.65	753.1	49	9.4	100	N	12	5.4	.....	.....	10n	.....	N	0.80	20.3	Light rain	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	48	8.9	49	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.42	747.3	29.75	755.6	78	25.6	82	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.88	631.9	30.15	765.8	32	0.0	79	W	4	1.8	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Leavenworth, Kansas	29.00	736.6	29.83	757.7	50	10.0	86	N	20	8.9	.....	.....	10ks	.....	N	1.76	44.7	Cloudy	
Los Angeles, California	29.62	752.3	29.96	761.0	57	13.9	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.35	745.5	29.88	758.9	72	22.2	58	S	11	4.9	.....	5ck	1s	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.44	747.8	30.11	764.8	63	17.2	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.92	734.6	29.60	751.8	49	9.4	100	NW	12	5.4	.....	.....	10n	.....	Calm	0.25	6.3	Light rain	
Mason, Texas	28.28	718.3	29.96	761.0	74	23.3	85	Calm	0	0	.....	0	8s	.....	SW	0	0	Fair	
Memphis, Tennessee	29.03	752.6	29.94	760.5	74	23.3	76	S	11	4.9	.....	.....	10s	.....	SW	0	0	Cloudy	
Milwaukee, Wisconsin	28.82	732.0	29.50	749.3	66	18.9	95	S	12	5.4	.....	.....	10s	.....	S	1.46	37.1	Cloudy	
Mobile, Alabama	30.02	762.5	30.06	763.5	76	24.4	73	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.86	758.4	30.09	764.3	72	22.2	67	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	28.99	736.3	30.00	762.0	68	20.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	28.98	609.1	30.34	770.6	50	10.0	100	W	13	5.8	.....	.....	Fog	.....	W	0	0	Foggy	
Nashville, Tennessee	29.46	748.3	29.98	761.5	71	21.7	66	SE	8	3.6	.....	0	8s	.....	SE	0	0	Fair	
New Haven, Connecticut	29.99	761.7	30.10	764.5	71	21.7	85	SW	2	0.9	.....	0	5s;hz	.....	S	0	0	Fair	
New London, Connecticut	30.08	764.0	30.13	765.3	70	21.1	95	SW	4	1.8	.....	0	8s	.....	SW	0	0	Fair	
New Orleans, Louisiana	29.93	760.2	29.99	761.7	76	24.4	82	SE	4	1.8	.....	7ck	0	SW	.....	Inap.	Inap.	Fair	
Newport, Rhode Island	30.06	763.5	30.11	764.8	70	21.1	85	SW	6	2.7	.....	5k	0	SW	.....	0	0	Fair	
New York, New York	29.94	760.5	30.12	765.0	65	18.3	89	SW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.11	764.8	30.17	766.3	69	20.6	90	S	8	3.3	.....	0	Haze	.....	.....	0	0	Clear	
North Platte, Nebraska	27.20	690.9	29.86	758.4	34	1.1	90	NW	10	4.5	.....	0	Haze	.....	Calm	0.01	0.3	Clear	
Olympia, Washington Ter.	30.08	764.0	30.12	765.0	51	10.6	93	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.85	732.8	29.94	760.5	45	7.2	76	NW	14	6.3	.....	2c	5s	NW	Calm	1.09	27.7	Clearing	
Oswego, New York	29.61	752.1	29.90	759.4	70	21.1	70	S	8	3.6	.....	1cs	0	Calm	.....	0	0	Clear	
Pembina, Dakota	29.02	737.1	29.56	758.4	35	1.7	90	W	6	2.7	.....	2ck	0	W	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.05	763.3	30.09	764.3	68	20.0	84	SW	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.84	732.5	.....	.....	57	13.9	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.54	452.2	30.06	763.5	17	— 8.3	67	NW	8	3.6	.....	0	0	.....	.....	0.24	6.1	Clear	
Pioche, Nevada	24.16	613.6	29.93	760.2	47	8.3	27	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Pittsburg, Pennsylvania	29.17	740.9	29.95	760.7	67	19.4	74	S	9	4.0	.....	5ck;k	0	W;SW	.....	0	0	Fair	
Port Huron, Michigan	29.08	738.6	29.70	754.4	70	21.1	70	S	12	5.4	.....	.....	10ks	.....	S	0.71	18.0	Cloudy	
Portland, Maine	30.01	762.2	30.06	763.5	62	16.7	88	SW	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	30.07	763.8	30.18	766.6	54	12.2	87	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.87	631.7	30.23	767.8	42	5.6	66	SW	4	1.8	.....	0.	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.18	741.2	29.99	761.7	61	16.1	88	N	19	8.5	.....	.....	10a	.....	NW	.....	.....	Light rain	
Punta Rassa, Florida	30.06	763.5	30.05	764.0	78	25.6	82	NE	8	3.6	.....	2c	0	Calm	.....	0	0	Clear	
Red Bluff, California	29.68	753.9	30.04	763.0	56	13.3	75	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.76	755.9	29.91	759.7	78	25.6	69	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.29	744.0	29.87	758.7	72	22.2	82	SW	15	6.7	.....	5cs	Haze	SW	Calm	0	0	Fair	
Roseburg, Oregon	29.58	751.3	30.16	766.1	49	9.4	89	Calm	0	0	.....	.....	10s;sm'	.....	Calm	0	0	Cloudy	
Sacramento, California	29.95	760.7	30.03	762.7	54	12.2	87	S	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.24	742.7	29.79	756.7	66	18.9	79	SW	4	1.8	.....	.....	10n	.....	Calm	0.23	5.8	Light rain	
St. Marks, Florida	30.11	764.8	30.13	765.3	67	19.4	95	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.93	734.8	29.75	755.6	46	7.8	69	NW	11	4.9	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Salt Lake City, Utah	25.73	653.5	30.06	763.5	46.0	7.8	77	E	4	1.8	.....	0	Haze	.....	.....	0.42	10.7	Clear	
San Antonio, Texas	29.21	741.9	29.77	756.1	78	25.6	86	SW	2	0.9	.....	.....	10s	.....	SE	0.09	2.3	Threatening	
San Diego, California	29.90	759.4	29.97	761.2	58	14.4	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.16	741.2	29.82	757.4	70	21.1	70	SW	13	5.8	.....	10c	0	N	.....	0	0	Cloudy	
Sandy Hook, New Jersey	30.07	763.8	30.10	764.5	74	23.3	76	W	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.99	761.7	30.06	763.5	53	11.7	90	SW	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	41	5.0	48	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.08	764.0	30.18	766.6	68	20.0	84	NE	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.72	754.9	29.92	760.0	74	23.3	95	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Silver City, New Mexico	24.37	619.0	.....	.....	46	7.8	54	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.17	766.3	30.20	767.1	73	22.8	85	S	1	0.4	.....	2c	2ks	NW	S	0	0	Fair	
Springfield, Massachusetts	29.95	760.7	30.08	764 0	67	19.4	79	S	3	1.3	.....	2k	0	S	.....	0	0	Fair	
Stockton, Texas	27.00	685.8	30.00	762.0	61	16.1	40	NW	8	3.6	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	30.04	763.0	30.10	764.5	63	17.2	100	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Toledo, Ohio	29.11	739.4	29.75	755.6	71	21.7	71	SE	14	6 3	.....	5c	5ks	Calm	SE	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	62	16.7	66	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.14	765.5	30.17	766.3	80	26.7	70	SE	4	1.8	.....	0	5ks	.....	SW	0	0	Fair	
Umatilla, Oregon	29.07	753.6	.....	.....	47	8.3	77	S	4	1.8	.....	.....	Sm'e	.....	S	0	0	Smoky	
Unalashka, Aleutian Islands	.....	.....	.....	.....	44	6.7	100	W	.....	.....	2	.....	10n	.....	W	0.17	4.3	Raining	
Uvalde, Texas	28.98	736.1	29.78	756.4	73	22.8	90	Calm	0	0	.....	2k	0	SW	.....	0	0	Clear	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	75	23.9	85	S	10	4.5	.....	5k	0	S	.....	0	0	Fair	
Virginia City, Montana	24.33	618.0	29.81	757.2	34	1.1	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.70	754.4	30.07	763.8	52	11.1	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.00	762.0	30.11	764.8	70	21.1	85	S	5	2.2	.....	2c	Sm'e	SW	S	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	52	11.1	60	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.10	764.5	30.18	766.6	69	20.6	90	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.73	653.6	30.09	764.3	36	2.2	53	E	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Wood's Holl, Mass	30.07	763.8	30.12	765.0	69	20.6	95	SW	8	3.6	.....	5cs;hz'	0	.....	.....	0	0	Fair	
Yankton, Dakota	28.74	730.0	30.06	763.5	37	2.8	85	NW	5	2.2	.....	0	2s	.....	NW	0.08	2.0	Fair	
Yuma, Arizona	29.77	756.1	29.93	760.2	64	17.8	52	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.64	752.8	29.70	754.4	26.0	— 3.3	95	S	4	1.8	.....	.....	9s	.....	S	3.00	76.2	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba. W. I	29.98	761.5	30.00	762.0	81	27.2	78	E	3.6	1.6	.....	4cs	0	E	.....	0	0	Fair	Chas. Hasselbrink.
Santiago de Cuba W. I	29.92	760.0	29.95	760.7	78	25.6	86	NNW	.....	.....	1	8ck	0	SW	.....	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	75	Calm	0	0	.....	0	2ks	.....	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.10	764.5	30.11	764.8	82	27.8	91	Calm	0	0	.....	8c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.86	758.4	29.94	760.5	85	29.4	.....	NE	10	4.5	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	84	28.9	73	E	.....	.....	2	4c	5k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	66.6	19.2	78	NE	1	0.4	.....	9k	1s	.....	.....	0.78	19.8	.....	Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2 486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.664 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.20	767.1	80	26.7	80	26.7	74	SE	20	8.9	.....	.....	2	.....	SE	0	0	.....	.....	Fair.....	
NavyYard,Portsmouth,N.H	30.00‡	762.0‡	.....	.....	64	17.8	89	SW	1	0.4	.....	.....	2	.....	.....	0	0	.....	.....	Misty.....	
Naval Hospital, Yokohama, Japan.....	29.79*	756.7*	77.5	25.3	77	25.0	98	S	.....	.....	4	.....	10n	.....	S	1.10	27.9	.....	.....	Light rain...	
Adams. S. 47° 10′, W. 136° 20′.....	29.34	745.2	42	5.6	41	5.0	??	WSW	.....	.....	8	.....	2?	.....	WSW	0	0	Heavy	WSW	Cloudy?.....	
Alliance, Leghorn, Italy.....	29.91‡	759.7‡	.....	.....	76	24.4	64	S	.....	.....	1	.....	3	.....	S	.....	.....	None	.....	Hazy.....	
Ashuelot. Yokohama, Japan	29.83	757.7	.78	25.6	78	25.6	95	S	.....	.....	2	.....	10	.....	Calm	.....	.....	Smooth	.....	Drizzling.....	
Alaska. S. 36° 33′, W. 73° 09′.....	30.32	770.1	60	15.6	50	10.0	64	SSE	.....	.....	3	.....	2	.....	N	0	0	Smooth	.....	D. clouds.....	
Colorado, New York, N. Y.....	30.12‡	765.0‡	.....	.....	68	20.0	84	SSW	7	3.1	.....	.....	.....	.....	.....	0	0	.....	.....	Hazy.....	
Constitution, Havre, France.....	29.93‡	760.2‡	.....	.....	57	13.9	75	NW	.....	.....	2	.....	3	.....	NW	.....	.....	.....	.....	Clear.....	
Despatch, Volo, Turkey.....	30.06‡	763.5‡	.....	.....	83	28.3	71	SSE	.....	.....	3	.....	2	.....	E	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.....	30.26	768.6	71	21.7	69	20.6	95	SSW	9.6	4.3	.....	.....	2	.....	SW	0	0	.....	.....	Clear.....	
Gettysburg N. 37° 08′, W. 1° 22′.....	29.88‡	758.9‡	.....	.....	80	26.7	100	SE	.....	.....	2	.....	2	.....	Calm	0	0	Light	SE	Clear.....	
Guard, Bahia, Brazil.....	30.18	766.6	80	26.7	79	26.1	74	ESE	.....	.....	2	.....	2	.....	SE	.....	.....	.....	.....	Fair.....	
Hartford, Rio de Janeiro, Brazil ...	29.91	759.7	.....	.....	83	28.3	53	NW	13.6	6.0	.....	.....	0	.....	.....	0	0	.....	.....	Hazy...	
Marion, Naples, Italy.....	30.01	762.2	76	24.4	78	25.6	78	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Michigan, Erie, Pa.....	29.86†	758.4†	.....	.....	70	21.1	79	SSE	.....	.....	4	.....	2	.....	SSE	.....	.....	.....	.....	Fair.....	
Monocacy. Yokohama, Japan	29.75‡	755.6‡	.....	.....	78	25.6	95	S	.....	.....	2-3	.....	10	.....	S	.....	.....	.....	.....	Rainy	
New Hampshire, Port Royal, S. C.....	30.35†	770.9†	.....	.....	74	23.3	90	NNE	6	2.7	.....	.....	2	.....	SW	0	0	.....	.....	Clear	
Onward, Callao, Peru.....	30.11†	764.8†	.....	.....	63	17.2	89	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.20	767.1	68	20.0	68	20.0	100	S	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear.	
Palos, Tientsin, China.....	29.84	757.9	78	25.6	77	25.0	65	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. New York, N. Y..... ...	30.17	766.3	71	21.7	70	21.1	100	S	.....	.....	0-1	.....	0	.....	.....	.....	.....	.....	.....	Misty.....	
Powhatan, New York, N. Y.....	30.10‡	764.5‡	.....	.....	70	21.1	85	ENE	4.6	2.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	29.84	757.9	85	29.4	85	29.4	76	WNW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	29.86	758.4	77	25.0	77	25.0	95	E	.....	.....	1	.....	2	.....	E	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.07‡	763.8‡	.....	.....	72	22.2	76	SW	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, League Island, Pa	30.01*	762.2*	.....	.....	73	22.8	81	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.04	763.0	70	21.1	68	20.0	95	SW	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France.....	30.00	762.0	60	15.6	59	15.0	65	NNW	.....	.....	2	.....	5	.....	NNW	.....	.....	.....	.....	Fair.....	
Swatara, Boston, Mass.....	30.08‡	764.0‡	.....	.....	66	18.9	94	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Foggy.....	
Trenton, Southampton, England.	29.88‡	758.9‡	.....	.....	61	16.1	77	N	.....	.....	4	.....	8	.....	W	1.4	36.	.....	.....	Showery	
Tuscarora, Ventana Bay, Lower California.	29.70	754.4	82	27.8	82	27.8	75	SSW	.....	.....	0-1	.....	5	.....	Calm	0	0	.....	.....	Fair.....	
Vandalia. Villafranca, France.....	29.90‡	759.4‡	.....	.....	75	23.9	77	SW	.....	.....	1	.....	10	.....	S	.....	.....	.....	.....	Threatening	
Wabash, Boston, Mass.....	30.10‡	764.5‡	.....	.....	67	19.4	89	SW	9	4.0	.....	.....	10	.....	Calm	0	0	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 35° 14', W. 121°		30.04†	763.0†	59	15.0	94	NW			4		8		NW	0	Small	WNW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 35° 14', W. 121°		30.04†	763.0†	59	15.0	94	NW			4		8		NW	0	Small	WNW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 50° 30' W. 26° 22'		30.05*	763.3*	58	14.4	94	SSE			6					Blank	Mod'ate	S	Cloudy	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, Yokohama, Japan		29.60*	751.8*	80	26.7	87	SW			4		ks		SW		Mod'ate	SW	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.67†	753.0†				NE			4		k			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 16', W. 137° 40'		30.25	768.3	63	17.2	72	NNW			3		9		NNW.		2	N	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreasen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 49° 48', W. 24° 48'		30.15*	765.8*	62	16.7	100	SSE			5		5		SSE	0	Large	NW	Cloudy	Captain Sargent.
S. S. Ohio, N. 43° 10', W. 61° 6'		30.21	767.3	73	22.8	76	SE			1		0			0	None		Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 27° 33', W. 64° 51'		29.96	761.0	82	27.8	67	NNE	11	4.9			10ks		NE	1.58 in or 40.1 mm.	Swell	NE	Cloudy	Capt. James Jorgen sen.
Schooner Florence, (N. 55° 45' W. 54° 45')?		30.04*	763 0*	44.0	6.7		WSW			3	0	10ks		SW	0			Cloudy	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 21, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.06	763.5	70.5	21.4	81	NE	.....	.....	1	.....	2	.....	.....	0	0	Fair	Dr. Olive.
Nemours	.....	.....	30.01	762.2	79.7	26.5	69	WNW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Kesxuche.
Algiers	.....	.....	29.95	760.7	79.9	26.6	69	N	.....	.....	3	.....	2	.....	.....	0	0	Fair	Tourillere.
La Calle	.....	.....	29.93	760.3	79.0	26.1	83	NNW	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Foufrede.
Tunis	.....	.....	29.91	759.8	82.2	27.9	70	ENE	.....	.....	0	.....	0	.....	.....	0.118	3.0	Clear	Jacques.
Sfax	.....	.....	30.05	763.2	84.2	29.0	.....	W	.....	.....	3	.....	7	.....	.....	0	0	Very cloudy	Gau.
Saida	.....	.....	29.96	761.0	78.8	26.0	24	N	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.00	761.9	75.7	24.3	43	N	.....	.....	3	.....	2	.....	.....	0	0	Fair	Watrin.
Geriville	.....	.....	30.00	762.0	86.0	30.0	35	S	.....	.....	6	.....	6	.....	.....	0	0	Cloudy	Brugniaux.
Laghouat	.....	.....	30.05	763.3	85.3	29.6	36	SW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Bertrand.
Biskra	.....	.....	30.01	762.3	89.1	31.7	30	NW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 899? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.34	745.2	29.88	759.0	60.1	15.6	88	NE	.....	.....	3	.....	10	.....	.....	0.961	24.4	Raining	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.22	742.3	29.99	761.8	54.3	12.4	95	W	.....	.....	1	.....	10	.....	.....	0.752	19.1	.....	Dr. Wierzbiski
Eperies	29.01	736.9	29.85	758.3	71.6	22.0	64	Calm	.....	.....	0	.....	10s	.....	N	0.144	3.65	.....	Julius Mikoiik.
Gratz	28.71	729.2	29.95	760.7	57.9	14.4	92	S	.....	.....	2	.....	10	.....	.....	0.728	18.50	.....	Andreas Rospini.
Hermannstadt	28.45	722.7	29.88	758.9	71.8	22.1	44	S	.....	.....	5	.....	6	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.66	728.0	29.99	761.8	56.1	13.4	89	W	.....	.....	1	.....	10	.....	.....	0.567	14.4	.....	Prof. C. Wagner
Lemberg	28.92	734.5	29.87	758.7	68.9	20.5	70	S	.....	.....	2	.....	5	.....	.....	0.008	0.2	.....	Dr. T. Stanecki.
Pola	29.69	754.1	29.80	756.8	74.3	23.5	76	SSE	.....	.....	2	.....	10ks	.....	.....	0.197	5.0	.....	I. R. Hydrographic Office
Szathmar	29.46	748.2	29.90	759.5	76.5	24.7	54	SE	.....	.....	3	.....	8	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.56	750.9	29.84	757.8	69.1	20.6	71	S	.....	.....	4	.....	8	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.71	754.7	29.82	757.3	66.2	19.0	84	ENE	.....	.....	2	.....	10	.....	.....	1.799	45.7	Thunder-storm	P. Busin.
Vienna	29.26	743.3	29.97	761.3	59.0	15.0	77	Calm	.....	.....	0	.....	10	.....	.....	0.287	7.3	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. M. Pasaan.
Brussels	29.96	760.9	30.16	766.0	55.9	13.3	78	NW	.....	.....	1	.....	8	.....	NW	0	0	.....	Royal Observatory.
Furnes	30.21	767.2	30.23	767.8	57.7	14.3	87	WNW	.....	.....	2	.....	7	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	30.00	761.9	30.13	765.2	58.5	14.7	86	WNW	.....	.....	2	.....	6	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE:—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.96	761.0	30.06	763.5	51.1	10.6		S	11	4.9			4			0	0	Blue sky	W. Boswell.
Ardrossan	30.04	763.0	30.06	763.5	54	12.2		SW			2		7					D. clouds	George Carrick.
Armagh, Observatory			30.08	764.0	53.3	11.8		S	11	4.9			10					Overcast	S. Call.
Bidston, (Liverpool Obs.)			30.14	765.5	56.3	13.5		W	9	4.0			0					Blue sky	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.70	754.4	30.10	764.5	54.5	12.5		W			2		5			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.94	760.5	29.97	761.2	83	28.3		S			2		3					D. clouds	Pvt. G. W. Roberts, A. [H.O.
Cambridge, Observatory			30.18	766.6	56.0	13.3		NW			1		7					D. clouds	H. Todd.
Cardington			30.19	766.8	58.0	14.4		NW			1		8					Overcast	John McLaren.
Chatham, School M. E	30.06	763.5	30.19	766.8	56.2	13.4		Calm			0		3					Blue sky	Lt.Col.C.N. Martin, R.E
Dartmoor	28.69	728.7	30.16	766.1	54.0	12.2		NW			3		4					Fine	Alexander Watt.
Donaghadee	30.06	763.5	30.09	764.3	56	13.3		SW			3		5					D. clouds	J. Mac Gowan.
Dover	30.16	766.1	30.19	766.8	57	13.9		WNW			2		0					Clear	J. Costello.
Eccles, (near Manchester)			30.14	765.5	55.9	13.3		W	2.0	0.9			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.99	761.7	30.22	767.6	60.7	15.9		S			2		6					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A.H.O.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	86.5	30.3		W			0		5					D. clouds	
Galway, Queen's College			29.97	761.2	57	13.9		S			3		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.03	762.7				E			2		2					Blue sky	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	29.85	758.2	30.05	763.3	54.9	12.7		SW			5		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.15	765.8	30.16	766.1	57	13.9		NW			3		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	30.02	762.5	30.19	766.8	59.1	15.1		NW			1		7					D. clouds	TheStaff, for G. B. Airy.
Guernsey	29.99	761.7	30.21	767.3	61	16.1		NW			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.26	768.6	62	16.7		SW			0		1c			0	0	Fine	M. P. Moyle.
Holyhead	30.08	764.0	30.13	765.3	57	13.9		SW			3		2					Blue sky	John Tilston.
Jersey	29.96	761.0	30.25	768.3	60.1	15.6		NW			2		3					D. clouds	J. Fisher.
Kew, Observatory	30.17	766.3	30.20	767.1	56.5	13.6		NW	6	2.7			8k					Hazy	The Staff.
Kingstown	30.12	765.0	30.15	765.8	55	12.8		W			1		9					Overcast	George Mitchell.
Leicester, Museum			30.17	766.3	56.3	13.5		SW			1		9					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.83	757.7	29.90	759.4	79	26.1		SE			1		4n					Gloomy	Sergt. Beckett.
Nairn	29.93	760.2	30.02	762.5	52	11.1		Calm			0		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.98	761.5	86.0	30.0		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.97	761.2	30.16	766.1	60.2	15.7		WNW			2		5ks;k		WSW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.64	752.8	30.16	766.1	59.0	15.0		SSW			2		9					Hazy	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.19	766.8	59	15.0		Calm			0		4					D. clouds	H.E. Bellamy.
Plymouth	30.13	765.8	30.21	767.3	60.5	15.8		SSW			2		6					D. clouds	John Merrifield.
Roche's Point	30.06	763.5	30.11	764.8	58	14.4		SSW			4		10					Dull	W. Kennedy.
Saint Ann's Head	30.00	762.0	30.17	766.3	59	15.0		SSW			2		2					Blue sky	John C. Walker.
Sandwick Manse, (Orkneys.			29.99	761.7	51.1	10.6		WSW	10	4.5			2					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.93	760.2	81.0	27.2		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.88	758.9	30.16	766.1	56.4	13.6		SW			1		4			0.15	3.8	D. clouds	W. F. Cooper.
Silloth, Rectory	30.08	764.0	30.11	764.8	60.6	15.9	73	NW			1		6			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.74	755.4	30.15	765.8	54.3	12.4		WSW			1		7					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.98	761.5	30.20	767.1	58.1	14.5		W			1		5					D. clouds	Rev. C.H. Griffith, F.M.S
Thurso			30.00	762.0	58	14.4		W			1		8					Overcast	John Trotter.
Truro, Royal Institution			30.22	767.6	65	18.3		S			4		4					D. clouds	W. Newcombe.
Valencia, Observatory	29.98	761.5	30.00	762.0	58.3	14.6		SSE	32	14.3			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.52	749.8	45.0	7.2	88	W			2		10kn			0.13	3.3	Squally	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	30.14	765.5	30.33	770.4	71.9	22.2	59	ESE	27.0	12.1		0	3		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.07	763.8	52.2	11.2	67	NW	13	5.8			6			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Bar. Corr. Inches	Millimeters	Bar. Reduced Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Direction Upper	Lower	Sea or swell. Height scale 0-9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 25′, W. 19° 10′			30.21	767.3	71	21.7		NE			3		9			2	NE	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 22° 30′, W. 35° 55′			30.05	763.3	81	27.2					1		7	NNE			WNW	D. clouds	Capt. D. W. A. Qualle
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 39° 40′, W 53° 10′			29.92	760.0	79	26.1		ESE			7		7			7	ENE	Squally	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.23	660.2			68.0	20.0	92	NE			2	2cs				0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.86	758.5	29.91	759.7	54.5	12.5	86	W			2		7						
Fanöe	29.91	759.7	29.93	760.2	53.8	12.1	72	NW			4		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.82	757.5	29.86	758.4	50.0	10.0	67	SSW			4		7						
Vestervig	29.68	753.9	29.85	758.2	53.2	11.8	99	W			4		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.72	754.9	30.27	768.9	59.7	15.4	86	NE			1		5		N	0.094	2.4	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	30.00	761.0	30.08	763.9	67.1	19.5	86	N			4		0			0	0	Very clear..	M. Giraud, Director.
†Bar-sur-Seine																0.055	1.4		C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.94	760.4	30.23	767.7	60.3	15.7	60	NW			2		8	W	NE	0.167	4.25	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.24	742.6	30.13	765.3	58.1	14.5	61	N			2		5		SSE	0.160	3.8	Cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.65	753.0	30.20	767.1	57.2	14	71	NW			1		2kn		NW	0.35	9.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.94	760.5	30.19	766.7	69.4	20.8	67	S			1		2k		Calm	0	0		The Staff.
Carcassonne, Normal School	29.74	755.4	30.15	765.7	68.0	20	71	W			1		5	NE	NE	0	0	Cloudy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.51	749.6	30.07	763.8	64.8	18.2	82	N			2		3	S	S	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.86	758.4	30.18	766.5	57.2	14.0	74	NW			1		5	N	N	0.118	3.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.79	731.2	30.14	765.6	63.0	17.2	40	N			1		8		N	0.004	0.1	Very cloudy	Allnard, Director.
Commercy, Normal School	29.30	744.3	30.19	766.8	54.7	12.6	81	NW			1		5cn		NW	0.217	5.5	Cloudy	Dr. Coulet, Director
Commune de Gréasque*	28.82	731.9	29.96	760.9	61.7	16.5	91	NW			4		0			0	0	Clear	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School	30.10	764.4	30.31	769.8	58.3	14.6	91	NW			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.95	760.6	30.25	768.4	59.0	15	58	NW			1		5		N	0.098	2.5	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.25	743.0	30.17	766.3	57.2	14	78	NE			6		5		NE	0.362	9.20	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School																			M. Galzin, Director
Mirecourt, Normal School	29.07	738.4	30.11	764.8	56.3	13.5	66	W			1		8kn		N	0.20	5.	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.79	756.6	30.00	762.0	67.8	19.6	63	N			4		k			0	0		Boyer, Director.
Privas, Normal School	29.03	737.8	30.09	764.2	60.1	15.6	42	Calm			0		0			0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.25	641.3			35.2	1.8	96	N			3		8		NW	0.165	4.2	Very cloudy	Allnard, Director.
Rochefort, Naval Obs'y	30.22	767.6	30.25	768.4	65.7	18.7	60	NNW			2		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.13	765.3	30.22	767.5	62.4	16.9	48	NNW			1		2		NW	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)			30.24	768.0	57.0	13.9	78	WNW			2		8		WNW	0.065	1.65	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	30.04	762.9	30.20	767.1	59.2	15.1	58	NW			1		8		NNE	0	0		E. Renou.
Tarbes, Normal School	29.13	739.9	30.19	766.8	66.2	19	81	W			2		5	WSW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.86	758.4	29.89	759.1	81.3	27.4										1.14	29.		L'Abbé Marchès.
Lyons			30.17	766.2	63.5	17.5	49					3				0	0		L. Jays.
Marseilles, Observatory			29.91	759.7	64.9	18.3	45	NW			8	0				0	0	Clear	The Staff.
Mont-Louis	24.93	633.2	30.24	768.2	58.1	14.5	93	SE			4	3			SW	0	0		M. Cave.
Nice			29.72	755.0	72.0	22.2	67	E			4	1				0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.91	759.8	30.19	766.8	59.0	15.0	52	NNW			2	8			NNW	0.051	1.3		Marié Davy, Director
Perpignan			30.10	764.4	66.2	19.0	42	N	24.3	10.83		0				0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.59	573.7			41.2	5.1		N			1	0				0.209	5.3	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.50	749.3	30.23	767.8	62.6	17.0	40	NNW			3	5				0	0		The Staff.
Tours	30.01	762.3	30.21	767.3	63.1	17.3	49	NNW			1	5			N	0.071	1.8		C. Marquet.
Versailles			30.20	767.1	61.9	16.6	47	N			1	8				0.005	0.13	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.72	755.0	29.75	755.7	69.4	20.8	96	NW	1.8	0.8		0				0	0	Clear	Marie Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône. †Observation taken 7 minutes late.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.14	740.1	29.98	761.5	58.1	14.5	69	E			2		8	W		0.016	0.4	Raining	Prof. Dr. Hoh.
Berlin	29.85	758.3	30.02	762.6	57.9	14.4	68	N			1		8			0.375	1.9		Prof. Arndt.
Breslau	29.47	748.6	30.00	762.1	64.4	18.0	52	SSW			2		10			0	0		Royal University Obs'y
Carlsruhe	29.67	753.6	30.10	764.5	58.6	14.8	62	NNW			1		5			0.028	0.7		Albert Senz.
Cassel	29.48	748.7	30.09	764.2	58.6	14.8	51	NNW			4		5	W		0	0		Dr. H. Möhl.
Crefeld	29.96	760.9	30.12	765.0	56.3	13.5	59	N			1		5k			0	0		Director Lose.
Emden	30.04	762.9	30.07	763.8	51.8	11.0	79	NW			2		10			0.228	5.8		Prof. Prestel.
Frankfort on the Main	29.75	755.7	30.11	764.9	61.2	16.2		NNE			2		6			0.189	4.8		Physical Society.
Friedrichshafen	28.63	727.1	30.07	763.7	52.9	11.6	88	W			3		10	W		0.031	0.8	Rainy	M. Wilhelm.
Hamburg	29.97	761.1	30.04	762.9	55.9	13.3	70	W			5		8k			0.189	4.8	Fair	Captain F. Hegemann.
Kiel	29.98	761.4	29.99	761.8	55.6	13.1	75	W			1		8			0.020	0.52		Prof. G. Karsten.
Königsberg, (Prussia)	29.84	758.0	29.93	760.1	58.1	14.5	71	W			3		6			0	0		Prof. E Luther.
Köslin			29.93	760.3	55.6	13.1		W			2		2			0.201	5.1		H. Müller.
Leipsic, Observatory	29.63	752.7	30.05	763.3	58.8	14.9	59	NW			3		8	N		0	0		Prof. Bruhns.
Memel, Naval School	29.84	758.0	29.89	759.2	58.3	14.6	64	WNW			5		7s						Reinbrecht and Skalweit.
Neufahrwasser	29.93	760.2	29.95	760.6	59.5	15.3	59	NW			3		7			0	0		A. Lothes.
Posen	29.72	754.8	30.00	762.0	61.3	16.3	62	NW			4		10			0.004	0.1		Dr. Magener.
Strassburg (in Alsace)	29.58	751.4	30.13	765.3	58.8	14.9	69	NE			2		10	N		0.053	1.35		Astronomical Observatory.
Stuttgart	29.11	739.4	30.05	763.3	56.3	13.5	68	N			1		6	N		0	0		Prof. Schoder.
Treves, (Trier)	29.58	751.4	30.11	764.7	58.8	14.9	55	NW			1		10			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.55	725.1	30.03	762.8	54.3	12.4	77	NW	0.4	0.2			10		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.99	761.7	30.03	762.7	55.6	13.1	76	WSW			2		4			0.193	4.9		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.58	751.4	29.96	761.0	61.6	27.5		SW			1.5							Dusty	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.57	751.0	29.62	752.2	87.1	30.6	74	WSW	30?	13.4?			8			0	0	D. clouds	
Deesa	29.16	740.6	29.62	752.2	93.8	34.3	56	NE					1	E		0	0	D. clouds	
Bombay	29.64	752.9	29.68	753.8	79.9	26.6	98	W	14	6.3			10		WSW	2.88	60.4	Raining	
Poona	27.73	704.2	29.74	755.3	74.5	23.6	95	W					10		W	0.05	1.3	Overcast	
Lahore	28.79	731.2	29.50	749.4	94.1	34.5	57	Calm	0.8	0.4			2			0	0	Blue sky	
Belgaum	27.22	691.2	29.75	755.7	73.7	23.2	92	W	13	5.8			4	E;W		0.10	2.5	D. clouds	
Roorkee	28.65	727.6	29.52	749.9	87.0	30.6	69	Calm	1	0.4			1			0	0		
Agra	29.03	737.4	29.58	751.4	86.7	30.4	72	N								0	0		
Nagpur	28.55	725.1	29.58	751.4	80.1	26.7	91	Calm	4.7	2.1			9		E	1.27	32.3	Thunder-storm	
Lucknow																			
Allahabad	29.22	742.2	29.52	749.9	84.7	29.3	90	Calm	1.1	0.5			4	NE		0	0	D. clouds	
Patna	29.36	745.8	29.54	750.4	82.9	28.3	90	SE	1	0.4			10	SE	SE	0.56	14.2	Overcast	
Hazaribagh	27.55	699.8	29.54	750.2	80.8	26.8	84	NNW	3.6	1.6			10			0.17	4.3	Thunder-storm	
Cuttack	29.45	748.0	29.63	750.0	84.0	28.9	81	WSW	1.9	0.8			10			0.05	1.3	Raining	
Calcutta (Alipore)	29.47	748.4	29.49	749.0	82.1	27.8	91	N	7	3.1			10			0	0	Overcast	
Goalpara	29.17	740.9	29.56	750.7	81.8	27.7	79	E	4.7	2.1			0			0	0	Blue sky	
Chittagong	29.56	750.8	29.65	753.2	76.8	24.9	95	WSW	13.8	6.2			10			0	0	Raining	
Sibsagar	29.25	742.9	29.58	751.3	81.5	27.5	79	SE	3	1.3			10	E	E	0	0	Gloomy	
Jubbulpore	28.25	717.6	29.60	751.9	81.6	27.6	88	E	2.4	1.1			7			2.81	71.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.45	748.1	29.85	758.3	62.8	17.1	84	E	4.3	1.9			10			0.960	24.9		Prof. Giovanni Clodig.
Padua	29.75	755.6	29.85	758.3	73.2	22.9	66	NE	0.7	0.3			10	SSW		0.244	6.2		Prof. Dott. Lorenzoni
Vicenza	29.67	753.6	29.86	758.4	73.4	23.0	64	SE	0	0			3	W		0.654	16.6		Cont. Alm. Da Schio.
Bergamo	28.48	723.3	29.76	755.9	64.8	18.2	62	N			6		8			0.094	2.4		Prof. Trionfini Carlo.
Milan	29.25	743.0	29.76	755.8	65.7	18.7	74	NNE			4		9	SE		0.322	8.2		Prof. Schiaparelli.
Moncalieri	28.85	732.9	29.74	755.5	65.5	18.6	60	N	4.3	1.9			10	SE		0.776	19.7		Prof. P. F. Denza.
Mondovi	27.86	707.5	29.73	755.1	60.4	15.8	90	NE			2		8	SE		1.717	43.6		Prof. D. C. Bruno.
Porto Maurizio	29.52	749.7	29.73	755.2	74.3	23.5	60	SSW			4		3	W		0	0		Prof. L. Vassallo.
Genoa	29.58	751.3	29.74	755.5	74.3	23.5	57	SE			6		4	SE		0	0		Prof. G. M. Garibaldi.
Parma	29.47	748.4	29.77	756.1	72.1	22.3	61	SSE			2		10			0.028	0.7		Prof. P. Pigorini.
Florence	29.56	750.8	29.81	757.2	68.0	20.0	81	WNW			4		10	SW		0.217	5.5		Cav. F Meucci
Leghorn	29.73	755.2	29.82	757.3	72.1	22.3	75	S	5.6	2.5			10			0.079	2.0		Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.31	719.1	29.84	757.8	70.2	21.2	68	SSW			1		10			0.059	1.5		Prof. P. Serpieri
Rome	29.68	753.8	29.85	758.2	75.4	24.1	72	S	9.4	4.2			10			0.378	9.6		Prof. P. G. S. Ferrari.
Naples, O. U	29.70	754.3	29.89	759.2	79.7	26.5	62	S			1		9	SSW		0	0		Prof. L. Palmieri.
Lecce	29.68	753.9	29.93	760.2	77.0	25.0	58	S	13.0	5.8			8	S		0	0		Prof. C. De Giorgi.
Cagliari	29.67	753.6	29.86	758.4	78.3	25.7	41	NW			4		8	NW		0	0		Prof. A. Pacinotti.
Cosenza	29.02	737.2	29.93	760.2	79.2	26.2	70	E			1		10			0	0		Prof. F. D. Conti.
Palermo	29.66	753.4	29.91	759.7	77.0	25.0	59	WSW	0.7	0.3			3			0.287	7.3		Prof. G. Cacciatore.
Syracuse	29.85	758.3	29.93	760.1	79.3	26.3	60	S	7.4	3.3			10	SW		0	0		Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.37	745.9	29.92	760.0	74.7	23.7	78	WNW	6.3	2.8			2	NW		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,246.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.33	745.0	29.63	750.0	72.2	22.3	95	SW	11.0	4.9			10n			1.120	28.45	Rainy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.02	752.3	29.68	753.9	77.8	25.4	95	S	11.7	5.2			3s;ks?			0	0	Cloudy?	
Tokei (Yeddo) University																			Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					62.3	16.8	73	N			5	5c	2s			0	0	Cloudy	P. Ceballos.
Guadalajara	25.09	637.2	30.03	762.6	62.2	16.8	78	SE			2	8cks	0	NE		0	0	Misty	Prof. L. Perez.
Guanajuato																			F. Ortiz.
Leon	24.46	621.3	29.99	761.8	63.9	17.7	76	NE			4	1c	2k	NE	Calm	0	0	Clear	Prof. M. Leal.
Mexico	23.14	587.8	30.17	766.2	53.2	11.8	84	Calm	0	0		3c	1s	NE		0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)					61.3	16.3	79	SW			1	2c	2ks		NE	0	0	½ cloudy	M. V. de Leon, M. E.
Puebla	23.36	593.3	30.01	762.2	62.9	11.6	81	NE	3.9	1.7		0	2cs		Calm	0.67	17.11	Clear	Prof. B. Gonzalez.
Tlacotalpam	29.92	759.9	29.93	760.2	77.7	25.4	91	S			2	10s	0	S		0	0	Gloomy	M, M. Cházaro.
San Luis Potosi	24.26	616.6	30.19	766.7	68.0	14.4	29	SE				7	2	W	SE	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.95	760.6	29.98	761.3	79.7	26.5	84	NW				2c	3s			0	0	½ cloudy	Prof. J. Rossell.
Zacatecas					59.0	15.0	81	NE			1	0	3		NE	0	0		J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.26	591.0	30.02	762.7	60.0	10.0	85	NNE	8.9	4.0		1	0	Calm		0.729	18.50	Clear	Prof. P. Spina, [M.M.D.D
Durango																			M. V. de Leon, C. E.
Colima	28.34	719.8	29.96	760.9	78.8	26.0	87	E	1.6	0.8		0	0		SE	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam																			Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,550.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.19	766.8	30.19	766.8	58.6	14.8		NW			2					0.039	1.0		
Groningen	30.04	763.1	30.10	764.5	53.8	12.1		NW			2					0.130	3.3		
Helder	30.10	764.6	30.10	764.6	56.3	13.5		W			4					0.016	0.4		
Hellevoetsluis	30.14	765.5	30.14	765.5	59.0	15.0	65	WNW			2								
Utrecht	30.10	764.6	30.15	765.8	59.5	15.3	63	NW			2		5			0.020	0.5	Cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.84	758.0	29.90	759.4	49.3	9.6	71	WNW	2.5	1.1	.....	.....	3	.....	.....	0.098	2.5	.....	
Brönö	29.43	747.4	29.47	748.4	50.0	10.0	76	W	22	10	.....	.....	8	.....	.....	0.118	3.0	Light rain...	
Christiania	29.61	752 0	29.75	755.7	56.7	13.7	48	WSW	9	4	.....	.....	1	.....	.....	0	0	.....	
Tromsö	28.85	732.9	28.90	734.0	47.5	8.6	78	SSW	13	6	.....	.....	10	.....	.....	1.378	35.0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 9h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.04	763.0	30.23	767.7	72.7	22.6	86	W	4.3	1.9	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.99	736.4	29.97	761.2	82.4	28.0	40	ENE	3.8	1.7	.....	.....	4	NW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.02	762.4	30.10	764.6	76.6	24.8	57	SW	2.5	1.1	.....	.....	4	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.4	30.01	762.2	77.6	25.3	36	ENE	6.3	2.8	.....	.....	4	WSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.18	766.6	30.25	768.3	74.8	23 8	80	SSW	.....	.....	.....	.....	3	.....	.....	0.244	6.2	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 9° 10′, E. 13° 01′	.....	.....	30.06	763.4	74.3	23.5	.....	W	.....	.....	3	.....	3	.....	W	2	W	D. clouds....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	30.10	764.5	79.0	26.1	.....	WNW	.....	.....	2	.....	10	.....	W	1	.....	D. clouds..	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.93	760.2	86.4	30.2	.....	ENE	.....	.....	2	.....	7	.....	ENE	2	SE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.73	755.2	86.0	30.0	.....	E	.....	.....	1	.....	0	.....	.....	0	.....	Blue sky.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.53	750.1	29.95	760.6	62.6	17.0	61	WSW	2	1	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.50	749.4	29.92	759.9	58.8	14.9	84	S	2	1	.....	.....	9	.....	.....	.....	.....	Heavy clouds...	Astronomical Obs.
Dorpat	29.57	751.1	29.81	757.1	60.6	15.9	59	SSW	7	3	.....	.....	8ck;s	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.78	756.4	29.80	756.8	59.2	15.1	65	SW	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.34	745.3	29.95	760.6	75.1	25.6	39	S	16	7	.....	.....	8ck	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.98	761.6	30.06	763.4	83.8	28.8	42	S	4	2	.....	.....	4k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.04	763.0	30.06	763.5	77.2	25.1	64	ENE	7	3	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.56	760.9	30.10	764.5	64.6	18.1	58	SW	11	5	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.51?	749.5?	29.71?	754.5?	77.7	25.4	32	ESE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.71	754.6	29.73	755.1	53.8	12.1	65	S	18	8	.....	.....	8k	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.69	728.6	30.07	763.6	71.8	22.1	62	Calm	0	0	.....	.....	9ks	.....	.....	.....	.....	.....	Physical Observatory.
Astrakhan	30.39	771.9	30.31	769.8	73.2	22.9	38	SE	9	4	.....	.....	1k	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.63	752.5	30.08	763.9	74.7	23.7	33	W	7	3	.....	.....	2k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.86	758.4	30.12	765.0	70.2	21.2	65	WSW	2	1	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.13	740.0	30.07	763.6	60.3	15.7	69	NW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.01	762.2	30.24	768.0	67.1	19.5	56	NW	13	6	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.52	724.4	30.22	767.6	58.3	14.6	79	W	4	2	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.43	747.6	29.96	760.9	49.5	9.7	84	WNW	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.67	753.5	29.96	761.0	44.2	6.8	90	E	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.66	753.4	29.80	757.0	74.5	23.6	66	Calm	0	0	.....	.....	8n	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.92	760.0	30.02	762.6	69.8	21	73	SW	2.2	0.97	.....	.....	4k	.....	.....	2.163	54.94	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.13	765.3	30.19	766.7	68.0	20.0	69	W	2.0	0.92	.....	3	2	E	.....	0.091	2.3	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.19	690.6	.....	.....	59.4	15.2	66	NE	10.4	4.64	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.86	707.6	30.01	762.2	85.6	29.8	26	NE	11.2	5.00	.....	0	0	.....	.....	Inap.	Inap.	Clear.	The Staff.
Murcia, Met. Obs'y	29.85	758.3	30.00	762.1	69.8	21.0	88	ENE	5.3	2.39	.....	2	7	E	.....	0.502	12.76	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.14	740.2	30.02	762.4	71.1	21.7	47	NE	12.4	5.56	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.2	30.00	761.9	76.8	24.9	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.92	760.0	30.02	762.5	76.6	24.8	71	WSW	11.5	5.1	.....	3	5	NW	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.89	759.3	29.98	761.6	81.3	27.4	86	SW	0	0	.....	2k	0	S	.....	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.25	743.0	29.29	744.0	48.2	9.0	.....	S	.....	.....	6	.....	10	.....	.....	0	0	.....	
Umea	29.63	752.7	29.69	754.0	53.2	11.8	65	W	.....	.....	6	.....	8	.....	.....	0	0	.....	
Hernosand	29.53	750.1	29.58	751.4	51.4	10.8	56	SW	.....	.....	2	.....	9	.....	.....	0	0	.....	
Stockholm	29.51	749.6	29.69	754.1	54.0	12.2	94	WSW	.....	.....	2	.....	2	.....	.....	0.047	1.2	.....	
Wisby	29.67	753.7	29.73	755.2	55.0	12.8	67	W	.....	.....	7	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.60	751.8	29.67	753.7	54.9	12.7	61	NW	5.6	2.5	.....	.....	1	S	W	0.000	0.01	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.67	728.3	30.10	764.4	55.9	13.3	69	NE	.....	.....	1	.....	9	.....	.....	0.205	5.2	Covered	The Observatory.
Zurich	28.46	722.8	30.10	764.6	52.2	11.2	86	W	.....	.....	2	.....	10	.....	.....	0.220	5.6	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.4 mm.; Thermometer, —4.0 cent.; Relative Humidity, +4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.99	761.8	73.9	23.3	71	NNE	14.	6.5	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.05	763.2	79.7	26.5	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.77	756.1	29.88	759.0	83.5	28.6	57	N	.....	.....	2	.....	2ks	.....	.....	0	0	D. clords	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.03	752.6	29.93	760.2	55	12.8	.....	W	1	0.4	.....	0	2s	.....	SW	0	0	Clear.	W. R. Bigg.
*Chatham, N B	29.76	755.9	29.81	757.2	64	17.8	89	SW	9	4.0	.....	.....	10s	.....	SW	0	0	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	64	17.8	83	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.68	753.9	29.87	758.7	55.6	13.1	72	NW	.....	.....	3	.....	10s	.....	.....	0.026	0.66	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	62.0	16.7	100	S	.....	.....	1	.....	.....	.....	.....	0.04	1.0	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.94	760.5	29.98	761.5	52.3	11.3	94	SW	.....	.....	.....	.....	10	.....	.....	0	0	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	29.56	750.8	29.58	751.3	70	21.1	66	S	30	13.4	.....	.....	10n	.....	SW	0	0	Cloudy.....	J. McWilliams.
Fredericton, N. B	29.83	757.7	29.89	759.2	63.2	17.3	88	SW	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Gloomy	Prof. Harrison.
*Fort Garry Manitoba	29.15	740.4	30.01	762.2	27	— 2.8	94	W	4	1.8	.....	5cs	2s	W	W	Inap.	Inap.	Fair	James Stewart.
Granton, Ontario	28.92	734.6	30.02	762.5	50	10.0	93	W	.....	.....	1	2c	0	E	.....	0.53	13.5	Fair.....	James Grant.
*Halifax, N. S	29.87	758.7	30.00	762.0	63	17.2	97	SW	4	1.8	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain...	F. Allison, M. A.
Hamilton, Ontario	29.68	753.9	30.05	763.3	55.2	12.9	74	W	.....	.....	4	0	0	.....	.....	0.12	3.0	Clear.	Geo. Dickson, M. A.
Heart's Content, N. F	30.09	764.3	30.12	765.0	60	15.6	65	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	E. Weedon.
*Kingston, Ontario	29.90	759.4	29.93	760.2	58	14.4	86	NW	9	4.0	.....	2cs	2ks	W	Calm	0.03	0.8	Clearing.....	S. Woods, M. A.
Little Glace Bay, N. S	29.99	761.7	30.03	762.7	67.6	19.8	78	W	14	6.3	.....	6c	0	W	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	29.62	752.3	29.81	757.2	60	15.6	65	NE	16	7.2	.....	8cs	2ks	.....	.....	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.28	743.7	29.97	761.2	48	8.9	85	W	6	2.7	.....	2ck	0	W	.....	0.55	14.0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.20	741.7	29.94	760.5	54.7	12.6	94	W	.....	.....	8	0	4ks	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.02	762.5	50	10.0	93	W	8	3.6	.....	10k	0	SW	.....	0.13	3.3	Fair.....	H. Morgan.
Port Hastings, N. S	29.96	761.0	30.00	762.0	69.4	20.8	.....	SW	6	2.7	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.39	746.5	30.04	763.0	48	8.9	86	W	8	3.6	.....	0	0	.....	.....	0.18	4.6	Clear.....	M. Payne.
*Quebec, Quebec	29.43	747.5	29.74	755.4	65	18.3	84	W	.....	.....	.....	.....	10n	.....	W	0.01	0.3	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.48	748.8	29.94	760.5	46	7.8	88	NW	10	4.5	.....	0	2s	.....	NW	0	0	Fair	W. H. McIntyre.
St. Andrews, N. B	29.86	758.4	29.91	759.7	59	15.0	99	SW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B	29.78	756.4	29.94	760.5	56	13.3	100	S	9	4.0	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.26	743.2	29.96	761.0	53	11.7	59	W	13	5.8	.....	5k	0	SW	.....	0.55	14.0	Cloudy.....	K. Stewart.
Stayner, Ontario	29.21	741.9	29.98	761.5	50	10.0	86	NW	4	1.8	.....	5k	0	NW	.....	0.12	3.0	Fair.....	R. J. Cole.
Stratford, Ontario	28.74	730.0	30.02	762.5	50.7	10.4	78	W	6	2.7	.....	1c	2s	Calm	.....	0.433	11.00	Fair.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.02	762.5	30.05	763.3	69	20.6	77	SW	13	5.8	.....	2c	5s	.....	SW	0	0	Fair.....	T. C. Hill.
*Toronto, Ontario	29.03	752.6	30.01	762.2	52	11.1	71	NW	6	2.7	.....	5ck	0	W	.....	0.05	1.3	Fair.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	61.0	16.1	86	SE	.....	.....	.....	0	0	.....	.....	0	0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and these telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.65	753.1	29.86	758.4	70	21.1	85	S	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Alpena, Michigan	29.31	744.5	29.96	761.0	44	6.7	84	SW	6	2.7	.....	0	0	.....	.....	0.20	5.1	Clear	
Atlantic City, New Jersey	29.96	761.0	29.98	761.5	72	22.2	90	SW	12	5.4	.....	5c	0	SW	.....	0	0	Fair	
Augusta, Georgia	29.91	759.7	30.09	764.3	72	22.2	90	Calm	0	0	.....	5ck	5s	SW	SW	0	0	Cloudy	
Baltimore, Maryland	29.94	760.5	29.99	761.7	69	20.6	85	W	8	1.3	.....	8k	2s	SW	W	0	0	Cloudy	
Barnegat, New Jersey	29.95	760.7	29.97	761.2	74	23.3	81	SW	16	7.2	.....	5c	0	SW	.....	0	0	Fair	
Bismarck, Dakota	28.25	717.5	30.10	764.5	22	— 5.6	72	E	6	2.7	.....	10cs	0	NW	.....	0	0	Cloudy	
Boerne, Texas	28.67	728.2	.....	.....	61	16.1	71	N	6	2.7	.....	0	0	.....	.....	0.31	7.9	Clear	
Boise City, Idaho	27.17	690.1	30.13	765.3	43	6.1	66	SW	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Boston, Massachusetts	29.76	755.9	29.91	759.7	73	22.8	81	SW	9	4.0	.....	4k	2s;hz	SW	SW;Calm	0	0	Fair	
Brackettville, Texas	29.00	736.6	30.03	762.7	60	15.6	75	N	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Breckenridge, Minnesota	29.08	738.6	30.14	765.5	19	— 7.2	93	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	29.91	759.7	29.98	761.5	76	24.4	95	N	4	1.8	.....	5k	0	N	.....	0.30	7.6	Fair	
Buffalo, New York	29.29	744.0	29.98	761.5	54	12.2	87	W	6	2.7	.....	.....	10s	.....	W	0.23	5.8	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.61	752.1	29.86	758.4	68	20.0	79	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Cairo, Illinois	29.77	756.1	30.16	766.1	53	11.7	78	N	12	5.4	.....	0	0	.....	.....	0.42	10.7	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	43	6.1	66	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.29	642.4	30.09	764.3	58	14.4	27	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.87	682.5	30.36	771.1	51	10.6	59	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.46	697.5	30.03	762.7	39	3.9	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	76	24 4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.00	762.0	30.03	762.7	70	21.1	80	SW	15	6.7	.....	2cs	0	SE	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	79	26.1	66	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	29.98	761.5	30.00	762.0	73	22.8	81	S	18	8.0	.....	2c	Haze	SW	.....	0	0	Fair	
Castroville, Texas	29.32	744.7	30.02	762.5	64	17.8	68	N	4	1.8	.....	0	0	.....	.....	0.40	10.2	Clear	
Charleston, South Carolina	30.08	764.0	30.14	765.5	76	24.4	82	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	39	3.9	73	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.39	746.5	30.09	764.3	46	7.8	62	SW	7	3.1	.....	0	0	.....	.....	0.20	5.1	Clear	
Cincinnati Ohio	29.43	747.5	30.05	764.0	55	12.8	81	NW	7	3.1	.....	.....	10s	.....	NW	0.48	12.2	Cloudy	
Cleveland, Ohio	29.34	745.2	30.06	763.5	55	12.8	56	NW	12	5.4	.....	.....	10ks	.....	NW	0.70	17.8	Cloudy	
Coleman City, Texas	28.37	720.6	30.07	763.8	50	10.0	86	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.24	742.7	30.08	764.0	51	10.6	86	N	7	3.1	.....	.....	10n	.....	N	0.55	14.0	Light rain	
Concho, Texas	28.24	717.3	29.94	760.5	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.70	754.4	30.17	766.3	52	11.1	86	N	8	3.6	.....	0	0	.....	.....	0.03	0.8	Clear	
Davenport, Iowa	29.52	749.8	30.17	766.3	47	8.8	84	Calm	0	0	.....	1cs	0	SW	.....	Inap	Inap.	Clear	
Decatur, Texas	29.03	737.3	30.21	767.3	53	11.7	86	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.40	746.7	30.21	767.3	51	10.6	86	N	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Denver, Colorado	24.89	632.2	30.11	764.8	46	7.8	62	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Des Moines, Iowa	29.24	742.7	30.12	765.0	54	12.2	61	SW	4	1.8	.....	0	2s	.....	SW	0.03	0.8	Clear	
Detroit, Michigan	29.38	746.2	30.05	763.3	50	10.0	79	W	3	1.3	.....	0	2s	.....	W	0.08	2.0	Fair	
Dodge City, Kansas	27.49	698.2	29.79	756.7	48	8.9	70	S	12	5.4	.....	1ck	0	NE	.....	0	0	Fair	
Dubuque, Iowa	29.42	747.3	30.02	762.5	44	6.7	76	NW	4	1.8	.....	2k	2s	NW	Calm	0.23	5.8	Fair	
Duluth, Minnesota	29.30	744.2	30.00	762.0	36	2.2	71	W	7	3.1	.....	0	0	.....	.....	0.02	0.5	Clear	
Eagle Pass, Texas	29.33	745.0	30.08	764.0	61	16.1	82	E	3	1.3	.....	5k	0	Calm	.....	0.38	9.7	Fair	
Eastport, Maine	29.85	758.2	29.91	759.7	59	15.0	100	S	9	4.0	.....	.....	Fog	.....	Calm	0.01	0.3	Foggy	
Edinburg, Texas	.....	.....	.....	.....	72	22.2	90	N	.....	.....	4	.....	8s	.....	N	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	70	21.1	32	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.32	744.7	30.02	762.5	56	13.3	87	NW	8	3.6	.....	.....	10s	.....	Calm	0.58	13.5	Cloudy	
Escanaba, Michigan	29.28	743.7	29.94	760.5	38	3.3	81	SW	6	2.7	.....	0	0	.....	.....	0.51	13.0	Clear	
Florence, Arizona	28.48	723.4	30 08	764.0	64	17.8	39	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.64	651.2	29.71	754.6	46	7.8	55	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.34	643.6	30.30	769.6	56	13.3	63	Calm	0	0	.....	2k	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.67	753.6	30.22	767.6	50	10.0	86	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.95	735.3	30.26	768.6	48	8.9	100	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.93	709.4	29.84	757.9	58	14.4	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.97	735.8	30.10	764.5	47	8.3	85	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.38	720.8	29.92	760.0	65	18.3	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.99	761.7	30.04	763.0	71	21.7	80	N	20	8.9	.....	0	5ks	.....	S	0.99	22.9	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.39	746.5	30.04	763.0	55	12.8	56	W	16	7.2	.....	2k	0	W	.....	0.44	11.2	Fair	
Indianapolis, Indiana	29.36	745.7	30.15	765.8	47	8.3	77	NW	4	1.8	.....	0	0	.....	.....	0.58	14.7	Clear	
Indianola, Texas	30.02	762.5	30.05	763.3	70	21.1	75	N	26	11.6	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Jacksboro, Texas	29.03	737.3	30.19	766.8	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.06	763.5	30.09	764.3	76	24.4	82	E	1	0.4	.....	0	0	.....	.....	0.01	0.3	Clear	
Keokuk, Iowa	29.52	749.8	30.15	765.8	50	10.0	72	W	6	2.7	.....	0	0	.....	.....	0.09	2.3	Clear	
Key West, Florida	29.97	761.2	30.00	762.0	81	27.2	78	NE	11	4.9	.....	1k	2s	NE	NE	0	0	Fair	
Kittyhawk, North Carolina	30.07	763.8	30.10	764.5	72	22.2	90	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.11	739.4	30.09	764.9	64	17.8	94	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
La Crosse, Wisconsin	29.34	745.2	30.09	764.3	45	7.2	84	W	4	1.8	.....	10k	0	W	.....	0.05	1.3	Cloudy	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	46	7.8	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.65	753.1	29.99	761.7	68	20.0	74	N	7	3.1	.....	5ck	5s	W	Calm	0.24	6.1	Cloudy	
Lead City, Dakota	24.85	631.2	30.12	765.0	35	1.7	80	Calm	0	0	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Leavenworth, Kansas	29.30	744.2	30.16	766.1	47	8.3	77	S	2	0.9	.....	2ck	0	NW	.....	0	0	Fair	
Los Angeles, California	29.63	752.6	29.97	761.2	55	12.8	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.58	751.3	30.15	765.8	53	11.7	61	N	9	4.0	.....	0	1s	.....	NW	0.72	18.3	Clear	
Lynchburg, Virginia	29.36	745.7	30.02	762.5	67	19.4	73	Calm	0	0	.....	2cs	5ks	Calm	S	0	0	Cloudy	
Marquette, Michigan	29.15	740.4	29.86	758 4	41	5.0	74	SW	13	5.8	.....	0	0	.....	.....	0.37	9.4	Clear	
Mason, Texas	28.47	723.1	30.19	766.8	52	11.1	86	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.85	758.2	30.19	766.8	57	13.9	81	NE	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Milwaukee, Wisconsin	29.33	745.0	30.07	763.8	44	6.7	76	SW	15	6.7	.....	0	1s	.....	Calm	Inap.	Inap.	Clear	
Mobile, Alabama	30.03	762.7	30.07	763.8	73	23.3	90	SE	8	3.6	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
Montgomery, Alabama	29.81	757.2	30.03	762.7	74	23.3	68	SE	9	4.0	.....	.....	10s	.....	Calm	0	0	Threatening	
Morgantown, West Virginia	28.97	735.8	29.98	761.5	66	18.9	84	S	7	3.1	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
Mt. Washington, N. H.	28.76	603.5	30.12	765.0	60	10.0	93	NW	50	22.4	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.63	752.6	30.16	766.1	57	13.9	87	NW	3	1.3	.....	.....	10s	.....	NW	0.15	3.8	Cloudy	
New Haven, Connecticut	29.83	757.7	29.94	760.5	73	22.8	81	SW	8	3.6	.....	5k	2ks;hz	SW	SW;Calm	0	0	Cloudy	
New London, Connecticut	29.91	759.7	29.96	761.0	72	22.2	90	SW	7	3.1	.....	2k	5s	SW	SW	0	0	Fair	
New Orleans, Louisiana	29.92	760.0	29.97	761.2	79	26.1	82	NE	6	2.7	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Newport, Rhode Island	29.91	759.7	29.96	761.0	70	21.1	90	SW	12	5.4	.....	.....	10ks	.....	SW	0	0	Threatening	
New York, New York	29.79	756.7	29.96	761.0	69	20.6	95	SW	12	5.4	.....	.....	10ks	.....	SW	0	0	Cloudy	
Norfolk, Virginia	30.02	762.5	30.08	764.0	71	21.7	85	S	8	3.6	.....	1c	Haze	Calm	.....	0	0	Clear	
North Platte, Nebraska	27.17	690.1	29.76	755.9	44	6.7	92	NE	10	4.5	.....	0	Haze	.....	Calm	0.24	6.1	Clear	
Olympia, Washington Ter.	30.02	762.5	30.06	763.5	54	12.2	74	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.99	736.3	30.07	763.8	48	8.9	85	SW	6	2.7	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Oswego, New York	29.65	753.1	29.96	761.0	60	15.6	71	NW	10	4.5	.....	.....	10s	.....	NW	0.14	3.6	Cloudy	
Pembina, Dakota	29.18	741.2	30.05	763.3	24	— 4.4	87	W	6	2.7	.....	5c	0	NW	.....	Inap.	Inap.	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Correcte for instrum'tal error and temperature. Inches.	Barometer: Correcte for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	29.93	760.2	29.98	761.5	71	21.7	85	SW	9	4.0	.....	5c;ck	Haze	Calm	Calm	0	0	Fair	
Phœnix, Arizona	28.83	732.3	.....	.....	64	17.8	43	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.96	464.8	30.17	766.3	21	— 6.1	57	NW	20	8.9	.....	8cs	2s	NW	Calm	0	0	Cloudy	
Pioche, Nevada	24.17	613.9	29.94	760.5	51	10.6	28	S	4	1.8	.....	1c	0	S	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.21	741.9	30.01	762.2	57	13.9	81	N	4	1.8	.....	.....	10s	.....	N	0.08	2.0	Cloudy	
Port Huron, Michigan	29.38	746.2	30.04	763.0	51	10.6	79	W	7	3.1	.....	0	2ks	.....	Calm	0.19	4.8	Clear	
Portland, Maine	29.83	757.7	29.88	758.9	66	18.9	89	S	9	4.0	.....	8k	Fog	SW	.....	0	0	Cloudy	
Portland, Oregon	30.06	763.5	30.16	766.1	55	12.8	87	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.90	632.4	30.26	768.6	44	6.7	60	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.41	747.0	30.26	768.3	51	10.6	93	N	5	2.2	.....	0	Sm'e	.....	Calm	0.02	0.5	Smoky	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	78	25.6	82	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.95	753.1	30.00	762.0	59	15.0	65	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.93	760.2	30.14	765.5	73	22.8	72	NW	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.37	746.0	29.97	761.2	57	13.9	75	W	6	2.7	.....	0	8ks	.....	W	0.08	2.0	Fair	
Roseburg, Oregon	29.58	751.3	30.17	766.3	39	3.9	96	NE	2	0.9	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.92	760.0	30.00	762.0	57	13.9	69	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.65	753.1	30.23	767.8	50	10.0	72	NW	2	0.9	.....	0	0	.....	.....	0.23	5.8	Clear	
St. Marks, Florida	30.05	763.3	30.07	763.8	71	21.7	95	SE	2	0.9	.....	0	1s	.....	Calm	0	0	Clear	
St. Paul, Minnesota	29.21	741.9	30.06	763.5	39	3.9	56	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.70	652.8	30.02	762.5	54.6	12.2	49	E	4	1.8	.....	5k	Haze	NW	.....	0	0	Fair	
San Antonio, Texas	29.39	746.5	29.97	761.2	64	17.8	83	N	4	1.8	.....	2cs	0	Calm	.....	1.58	38.9	Clear	
San Diego, California	29.92	760.0	29.99	761.7	59	15.0	100	NW	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.41	747.0	30.07	763.8	56	13.3	93	NW	12	5.4	.....	8c	2ks	NW	Calm	0.48	12.2	Cloudy	
Sandy Hook, New Jersey	29.92	760.0	29.95	760.7	74	23.3	86	W	14	6.3	.....	8c	Haze	W	Calm	0	0	Cloudy	
San Francisco, California	29.94	760.5	30.01	762.2	53	11.7	86	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.41	594.6	29.95	760.7	44	6.7	36	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.03	762.7	30.12	765.0	76	24.4	82	Calm	0	0	.....	1k	Haze	Calm	Calm	0	0	Clear	
Shreveport, Louisiana	29.91	759.7	30.13	765.3	60	15.6	76	N	8	3.6	.....	0	0	.....	.....	0.70	17.8	Clear	
Silver City, New Mexico	24.33	618.0	.....	.....	44	6.7	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.10	764.5	30.14	765.5	73	22.8	85	NW	2	0.9	.....	1k	0	W	.....	0	0	Clear	
Springfield, Massachusetts	29.79	756.7	29.92	760.0	73	22.8	81	S	4	1.8	.....	2c	5ks	W	SW	0	0	Cloudy	
Stockton, Texas	27.11	688.6	30.11	764.8	47	8.3	48	S	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	29.86	758.4	29.92	760.0	65	18.3	94	SW	10	7.2	.....	1c	Haze	.....	Calm	0	0	Clear	
Toledo, Ohio	29.39	746.5	30.06	763.5	55	12.8	81	S	4	1.8	.....	0	2s	.....	Calm	0.37	9.4	Clear	
Tucson, Arizona	.....	.....	.....	.....	60	15.6	61	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.09	764.3	30.12	765.0	77	25.0	77	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.62	752.3	.....	.....	52	11.1	73	SW	8	3.6	.....	Haze	Sm'e	Calm	SW	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	SW	.....	.....	1	.....	10s	.....	SW	0.19	4.8	Cloudy	
Uvalde, Texas	29.22	742.2	30.03	762.7	60	15.6	88	Calm	0	0	.....	0	0	.....	.....	0.45	11.4	Clear	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	69	20.6	90	N	4	1.8	.....	.....	10n	.....	Calm	2.00	50.8	Raining	
Virginia City, Montana	24.29	617.0	29.77	756.1	42	5.6	50	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.65	753.1	30.02	762.5	58	14.4	75	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.92	760.0	30.03	762.7	69	20.6	85	S	4	1.8	.....	8ck	2ks	SW	SW	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	86	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.11	764.8	71	21.7	90	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.72	653.3	30.08	764.0	38	3.3	81	SW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Wood's Holl, Mass	29.92	760.0	29.97	761.2	69	20.6	95	SW	10	4.5	.....	.....	10ks	.....	SW	0	0	Threatening	
Yankton, Dakota	28.83	732.3	30.17	766.3	34	1.1	89	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.77	756.1	29.93	760.2	63	17.2	67	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.60	751.8	29.65	753.1	36.5	3.0	100	SW	10	4.5	.....	.....	10n	.....	SW	1.10	27.9	Raining	J. Fortescue, W. Wood
Havana, Cuba. W. I	29.97	761.2	29.99	761.7	80	26.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Chas. Hasselbrink.
Santiago de Cuba. W. I	29.85	758.2	29.88	758.9	80	26.7	86	Calm	0	0	.....	0	2k	.....	.....	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	84	28.9	79	Calm	0	0	.....	0	2ks	.....	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.13	765.3	30.14	765.5	81	27.2	87	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	85	29.4	.....	E	5	2.2	.....	.....	.....	.....	.....	0	0	Partly cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	84	28.9	68	SE	.....	.....	2	0	4k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	69.0	20.6	79	Calm	0	0	.....	0	2ks	.....	.....	0.35	8.9	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,393 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,405.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,050 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.468 in.; Campo, 2.67 in.; Cheyenne, 6.04 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.17	766.3	77	25.0	77	25.0	91	NE	3	1.3	.....	.....	10	.....	NE	1.44	36.6	.....	.....	Stormy.....	
Navy Yard, Portsmouth, N.H	29.91‡	759.7‡	.....	.....	71	21.7	54	SW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Misty.....	
Naval Hospital, Yokohama, Japan	29.72*	754.9*	78.8	26.0	78.9	26.1	91	SW	.....	.....	4	.....	4ks	.....	SW	0.02	0.5	.....	.....	Fair.....	
Adams. S. 46° 42′, W. 134° 24′	29.20	741.7	74	23.3	44	6.7	76	SW	.....	.....	8	.....	2?	.....	SW	0	0	Heavy	SW	Cloudy?.....	
Alliance, Leghorn, Italy	29.81‡	757.2‡	.....	.....	72	22.2	71	SE	.....	.....	2–3	.....	10	.....	SE	.....	.....	Light	S	Rainy	
Ashuelot. Yokohama, Japan	29.97	761.2	80	26.7	78	25.6	95	S	.....	.....	3	.....	2	.....	Calm	.....	.....	Smooth	.....	Light haze..	
Alaska. S. 36° 42′, W. 73° 07′	30.16	766.1	61	16.1	51	10.6	86	SSW	.....	.....	2	.....	8	.....	NE	0	0	Smooth	.....	D. clouds.....	
Colorado. New York, N. Y.	29.99‡	761.7‡	.....	.....	71	21.7	90	SW	11	4.9	.....	.....	8	.....	SW	0	0	... .	.....	Hazy.....	
Constitution, Havre, France	30.21‡	767.3‡	.....	.....	60	15.6	76	WSW	.....	.....	2	.....	4	.....	NW	.....	.....	.....	.....	Fair.....	
Despatch. Volo, Turkey	29.99‡	761.7‡	.....	.....	83	28.3	50	SE	.....	.....	3	.....	5	.....	NE	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.	30.16	766.1	72	22.2	71	21.7	95	SSW	8.4	3.8	.....	.....	2	.....	SW	0	0	.....	.....	Fair	
Gettysburg N. 36° 11′, W. 4° 54′	29.93‡	760.2‡	.....	.....	81	27.2	100	SE	.....	.....	1	.....	2	.....	Calm	0	0	Light	SE	Clear.....	
Guard, Bahia, Brazil	30.17	766.3	78	25.6	78	25.6	86	NE	....	.....	1	.....	5	.....	NNE	.....	.....	.....	.....	Fair.....	
Hartford, Rio de Janeiro, Brazil	30.12	765.0	.....	.....	69	20.6	90	SSW	10.8	4.8	.....	.....	10	.....	.....	0.09	2.3	.....	.....	Rainy	
Marion, Naples, Italy	29.90	759.4	76	24.4	79	26.1	78	Calm	.....	.....	0	.....	10	.....	Calm	0	0	.....	.....	Cloudy.....	
Michigan. Erie, Pa	29.96†	761.0†	.....	.....	56	13.3	81	WNW	.....	.....	5	.....	10	.....	WNW	.....	.....	.....	.....	Cloudy.....	
Monocacy. Yokohama, Japan	29.68‡	753.9‡	.....	.....	79	26.1	91	S	.....	.....	2–3	.....	5	.....	S	.....	.....	.....	.....	Fair.....	
New Hampshire, Port Royal, S. C.	30.30†	769.6†	.....	.....	78	25.6	82	Calm	0	0	.....	.....	2	.....	NW	0	0	.....	.....	Clear.	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	61	16.1	94	S	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.	30.12	765.0	72	22.2	70	21.1	95	SW	.....	.....	2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China	29.88	758.9	78	25.6	74	23.3	76	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Plymouth. New York, N. Y.	30.16	766.1	72	22.2	72	22.2	90	SW	.....	.....	1	.....	10	.....	SW	.....	.....	.....	.....	Misty.....	
Powhatan, New York, N. Y.	29.98‡	761.5‡	.....	.....	72	22.2	85	SW	6.0	2.7	.....	.....	8	.....	.....	0	0	.....	.....	Clear?.....	
Ranger. Hong-Kong, China	29.88	758.9	84	28.9	84	28.9	71	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas	29.91	759.7	77	25.0	77	25.0	95	NW	.....	.....	2	.....	8	.....	N	.....	.....	.....	.....	Fair...	
Santee, Annapolis, Md.	29.95‡	760.7‡	.....	.....	71	21.7	80	SW	.....	.....	1	.....	8	.....	.....	0	0	.....	.....	Cloudy..... .	
Saratoga, League Island, Pa	29.90*	759.4*	.....	.....	71	21.7	95	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	29.90	759.4	72	22.2	72	22.2	80	SW	12	5.4	.....	.....	5	.....	SW	0	0	.....	.....	Fair	
Supply, Havre, France	30.26	768.6	60	15.6	62	16.7	61	NW	.....	.....	0–1	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Swatara, Boston, Mass.	29.91‡	759.7‡	.....	.....	70	21.1	95	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	30.16‡	766.1‡	.....	.....	64	17.8	53	N	.....	.....	1	.....	8	.....	W	0.2	5.	.....	.....	Cloudy.....	
Tuscarora. Ventana Bay, Lower California.	29.69	754.1	83	28.3	83	28.3	79	WSW	.....	.....	1–2	.....	0	.....	.....	0	0	....	.....	Clear.....	
Vandalia, N. 43° 01′, E. 6° 36′	29.81‡	757.2‡	.....	.....	70	21.1	80	NW	.....	.....	5–6	.....	2	.....	NW	.....	.....	Rough	NW	Squally.....	
Wabash, Boston, Mass.	29.88‡	758.9‡	.....	.....	73	22.8	76	SW	7	3.1	.....	.....	5	.....	Calm	0	0	.....	.....	Fair.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, N. 39° 20', W. 124° 10'		30.07*	763.8*				NW			3		Fog				Mod'ate	NW	Foggy	Capt. Cobb.
S. S. City of Peking																			Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 31° 16', W. 118° 59'		30.04†	763.0†	62	16.7	94	SSW			2		10		Calm	0	Small	NW	D. clouds	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 51° 09' W. 16° 40'		29.82*	757.4*	62	16.7	100	WNW			5		2c		NW	Mod'ate	Mod'ate	SW	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic, N. 35° 39', E. 142° 06'		29.66*	753.4*	80	26.7	91	SW			3		ks		SW		Mod'ate	SW	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.70†	756.7†				NE			4		k			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 17', W. 142° 52'		30.30	769.6	68	20.0	95	Var.			3		8		W		4	W	Drizzling	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-Swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 00', W. 16° 40'		29.81*	757.2*	73	22.8	85	SSW			3		3		SSW	0	Mod'ate	NW	Clearing,	Captain Sargent.
S. S. Ohio, N. 41° 10', W. 67° 45'		30.04	763.0	72	22.2	90	SSW			3		0			0	None		Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 26° 04', W. 64° 33'		29.96	761.0	81	27.2	78	NE	6	2.7			5k		NE	[3.67 in or 93.3 mm.	Swell	NE	Cloudy	Capt. James Jorgensen.
Schooner Florence, (N. 54° 45' W. 53° 45')?		30.07*	763.8*	48.5	9.2		SSE			2	6ck	1s		SE	0.08 in or 2.0 mm.			Fair	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; when the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, D. clouds for detached clouds. cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 22, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.08	763.9	70.0	21.1	85	NE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Dr. Ollive.
Nemours	.....	.....	30.01	762.2	79.9	26.6	73	N	.....	.....	3	.....	1	.....	.....	0	0	Very fair	Kesxuche.
Algiers	.....	.....	29.94	760.4	78.8	26.0	73	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Tourillere.
La Calle	.....	.....	29.95	760.8	79.5	26.4	65	NNW	.....	.....	1	.....	2	.....	.....	0	0	Fair	Foufrede.
Tunis	.....	.....	30.02	762.6	76.1	24.5	74	NW	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.08	764.0	80.6	27.0	.....	NNE	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	29.93	760.3	84.2	29.0	24	NNW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.01	762.3	68.0	20.0	47	N	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	30.02	762.5	86.7	30.4	39	W	.....	.....	6	.....	8	.....	.....	0	0	Very cloudy	Brugniaux.
Laghouat	.....	.....	30.06	763.5	83.5	28.6	36	Calm	.....	.....	0	.....	1	.....	.....	0	0	Very fair	Bertrand.
Biskra	.....	.....	30.05	763.2	89.6	32.0	33	NW	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.35	745.6	29.90	759.5	56.8	13.8	70	NE	.....	.....	4	.....	10	.....	.....	0.016	0.4	.....	Prof. Ivan Stoair.
Cracow, I. R. Observatory	29.31	744.5	30.08	764.1	53.2	11.8	91	ENE	.....	.....	3	.....	10	.....	.....	0.354	9.0	.....	Dr. Wierzbiski
Eperies	29.10	739.0	29.97	761.2	55.4	13.0	83	N	.....	.....	3	.....	10k;n	.....	S	0.106	2.70	.....	Julius Mikolik.
Gratz	28.69	728.6	29.93	760.1	57.7	14.3	63	WNW	.....	.....	3	.....	10	.....	.....	0.760	19.30	.....	Andreas Rospini.
Hermannstadt	28.36	720.3	29.77	756.1	75.7	24.8	48	SE	.....	.....	3	.....	5	.....	.....	0.006	0.15	.....	Prof. A. Gottschling.
Kremsmünster	28.71	729.2	30.05	763.3	54.0	12.2	79	NNW	.....	.....	1	.....	10	.....	.....	0.118	3.0	.....	Prof. C. Wagner
Lemberg	29.01	736.9	30.00	761.9	53.8	12.1	88	NE	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	Dr. T. Stanecki.
Pola	29.69	754.2	29.80	757.0	63.9	17.7	64	ENE	.....	.....	3	.....	9ks	.....	.....	3.544	90.0	.....	I.R.Hydrographic Office
Szathmar	29.40	746.7	29.85	758.1	70.5	21.4	62	N	.....	.....	3	.....	9	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.51	749.6	29.78	756.5	67.6	19.8	83	Calm	.....	.....	0	.....	10	.....	.....	0.098	2.50	.....	Karl Stancel.
Trieste	29.74	755.4	29.84	758.0	64.0	17.8	82	ENE	.....	.....	2	.....	10	.....	.....	0	0	Cloudy.	P. Busin.
Vienna	29.27	743.4	29.99	761.7	50.4	10.2	87	N	.....	.....	2	.....	10	.....	.....	0.346	8.8	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.016	0.4	.....	Prof. M. Passau.
Brussels	29.82	757.3	30.01	762.3	58.6	14.8	57	S	.....	.....	2	.....	5	.....	S	0.012	0.30	.....	Royal Observatory
Furnes	29.98	761.6	30.01	762.2	59.5	15.3	65	SSE	.....	.....	2	.....	8	.....	.....	0	0	.....	M. E. de Cae.
Maeseyck	29.95	760.7	30.08	764.0	61.3	16.3	58	SSW	.....	.....	2	.....	7	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

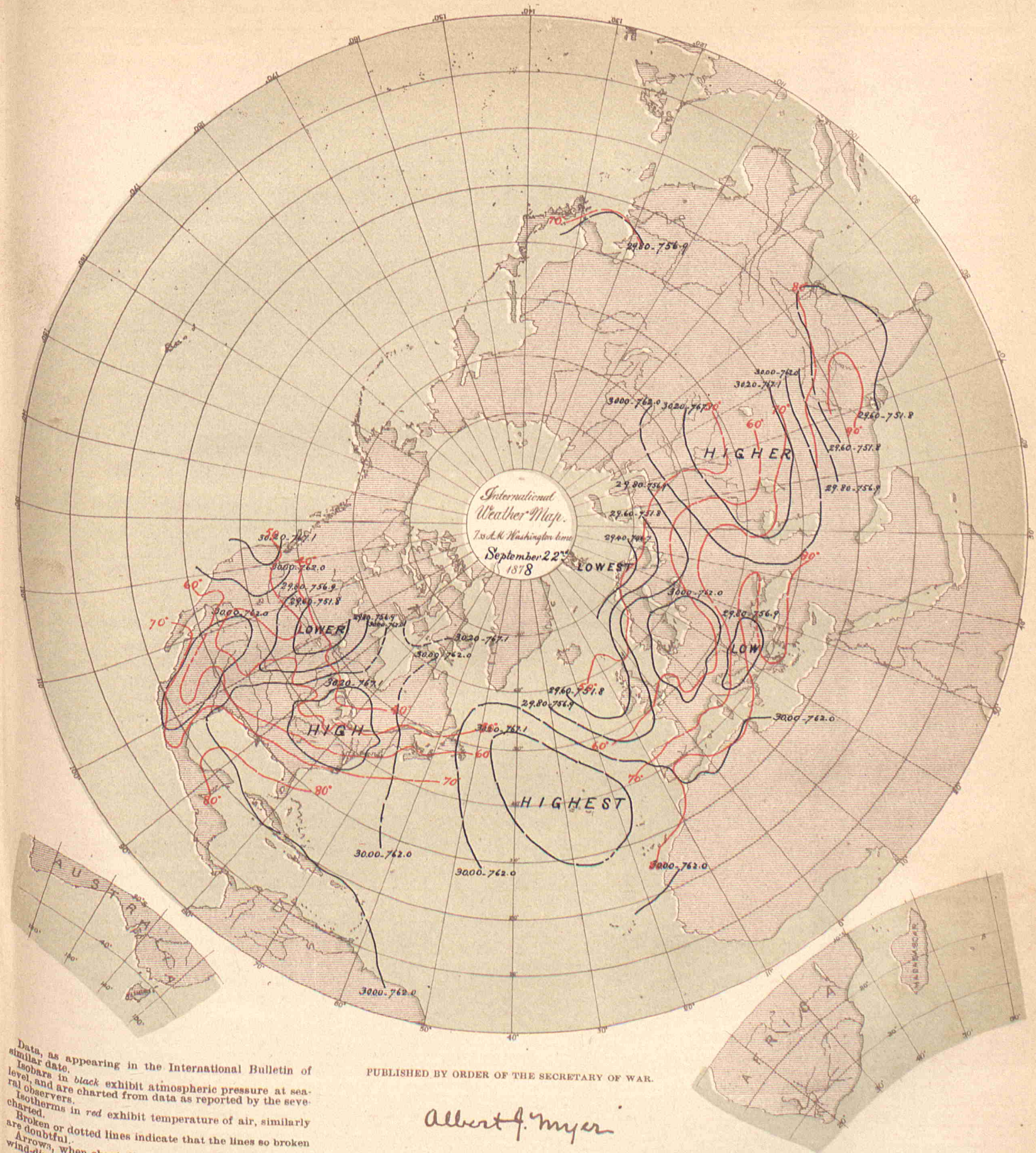
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.58	751.3	29.68	753.9	55.7	13.2		SSE	28	12.5			8			0.590	14.99	Squally	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			29.59	751.6	50.2	10.1		SW	7	3.1									S. Call.
Bidston, (Liverpool Obs.)			29 65	753.1	55.1	12.8		SE	19	8.5			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.94	760.5	82	27.8		SE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.87	758.7	56.0	13.3		S			1		10					Raining	H. Todd, [H. C.
Cardington			29.86	758.4	55.0	12.8		SE			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.76	755.9	29.89	759.2	57.2	14.0		NE			1		0					Blue sky	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.34	719.8	29.80	756.9	53.0	11.7		NW			6		9					Raining	Alexander Watt.
Donaghadee	29.53	750.0	29.56	750.8	50	10.0		WSW			4		10					Raining	J. Mac Gowan.
Dover	29.86	758.4	29.89	759.2	58	14.4		S			5		8					Gloomy	J. Costello.
Eccles, (near Manchester)			29.70	754.4	55.0	12.8		SE	1.0	0.4			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.45	748.0	29.68	753.9	53.8	12.1		S			2		10					Raining	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	83	28.3		W			1		4					D. clouds	
Galway, Queen's College			29.56	750.8	56	13.3		W			2		8					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.91	759.7	29.96	761.0				E			3		4					D. clouds	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.32	744.7	29.52	749.8	52.5	11 4		SE			6		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.92	760.0	29.93	760.2	58	14.4		S			4		5					D clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.71	754.6	29.88	758.9	57.5	14.2		S			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.59	751.6	29.81	757.2	58	14.4		SE			5		8					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.73	755.1	56	13.3		SE			3		10n					Heavy rain	M. P. Moyle.
Holyhead	29.54	750.3	29.59	751.6	52	11.1		WNW			4		10					Raining	John Tilston.
Jersey	29.59	751.6	29.88	758.9	59.0	15.0		S			6		10					Overcast	J. Fisher.
Kew, Observatory	29.83	757.7	29.87	758.7	55.0	12.8		S	13	5.8			10					Raining	The Staff.
Kingstown	29.58	751.3	29.61	752.1	51	10.6		WNW			4		10					Overcast	George Mitchell.
Leicester, Museum			29.82	757.4	54.0	12.2		S			2		10					Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	80	26.7		NW			1		3c					D. clouds	Sergt. Beckett.
Nairn	29.44	747.8	29.52	749.8	58	14.4		SSW			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	84.5	29.2		SE			1		0					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.61	752.1	29.80	756.9	55.7	13.2		SSE			5		10cs;k		S	0.014	0.36	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.23	742.4	29.75	755.6	54.0	12.2		S			4		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.81	757.2	57	13.9		WSW			5		10					Threatening	H.E. Bellamy.
Plymouth	29.64?	752 8?	29.71	754.6	55.3	12.9		SSW			6		10					Raining	John Merrifield.
Roche's Point	29.61	752.1	29.66	753.4	52	11.1		NW			2		10					Wet	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys)			29.56	750.8	55	12.8		SSE	33	14.8			5					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.85	758.2	75.0	23.9		S			1		3					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.52	749.8	29.80	756.9	54.8	12.7		SW			3		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth, Rectory	29.59	751.6	29.62	752.3	52.1	11.2	93	E			2		10			0.845	21.47	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.50	744.2	29.70	754.4	53.7	12.1		SE			4		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.65	753.1	29.86	758.4	56.0	13.3		W			1		10			Blank	Blank	Overcast	Rev. C. H. Griffith, F.M.S
Thurso			29.56	750.8	57	13.9		SSE			4		8					Overcast	John Trotter.
Truro, Royal Institution			29.66	753.4	60	15.6		W			6		10					Raining	W. Newcombe.
Valencia, Observatory	29.62	752.3	29.64	752.8	55.5	13.1		WNW	9	4.0			7					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.44	747.8	54.5	12.5	88	N			3		7k			0.83	21.1		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	30.10	764.5	30.29	769.3	70.0	21.1	65	SE	20.0	8.9		0	5		SE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.80	756.9	29.90	759.4	53.0	11.7	64	N	10	4.5			0			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,206 ft. or 670.6 m.

* Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria				Capt. W. Watson.
Brig Catherine				Capt. Alex. Wilson.
Barque Commewyne				Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20′, W. 24° 15′	3	ENE	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 22° 5′, W. 36° 25′	4	NE	D. clouds	Capt. D. W. A. Quaile.
S. S. Peruvian				Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 40° 15′, W 52° 20′	8	SE	Squally	Capt. Alex. Simpson.
Barque Virginia				Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.23	666.2			68.4	20.2	91	SE			3	8cs				Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.08	763.9	30.12	765.1	54.9	12.7	52	SW			2		9					
Faröe	30.04	763.0	30.06	763.5	56.8	13.8	78	SSE			4		6					
Godthaab, (Greenland)																		
Stykkisholm, (Iceland)																		
Thorshavn, (Faröe)	29.52	749.8	29.56	750.7	52.2	11.2	86	SE			2		10					
Vestervig	29.87	758.8	30.04	763.1	55.8	13.2	66	SW			2		2					

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.47	748.6	30.02	762.6	59.7	15.4	78	S			1		5		S	0	0	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.85	758.2	29.93	760.2	70.2	21.2	40	NNW			3		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.43	747.5	29.98	761.4	60.6	15.9	50	SE			2	1c				0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.71	754.6	29.99	761.7	61.3	16.3	55	SSE			2		10		SSW	0	0	Covered	Frere Eugene Marie, Director.
Besançon	29.15	740.3	30.02	762.6	59.9	15.5	63	NNE			2		1		S	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.42	747.2	29.96	761.0	60.8	16	85	NW			1		0			0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.40	749.1	29.74	755.3	61.9	16.6	81	SW			4		10		SW			Raining	The Staff.
Carcassonne, Normal School	29.52	749.8	29.92	759.9	75.2	24	20	W			2		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.42	747.2	29.97	761.2	62.1	16.7	81	W			2		7	N	N	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.68	753.9	29.99	761.8	63.7	17.6	56	SW			1		2	NW	NW	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.78	730.9	30.10	764.4	60.7	15.3	45	E			1		5			0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.17	740.8	30.04	763.0	57.2	14	67	E			1		2clkn		E	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèsque*	28.82	731.9	29.96	760.9	72.0	22.2	25	N			2		0			0	0	Clear	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.62	752.3	29.92	760.0	63.5	17.5	47	WNW			3		8		WNW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	740.0	30.04	763.0	60.8	16	89	N			1		5		N	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School																			M. Galsin, Director
Mirecourt, Normal School	28.97	735.8	30.01	762.2	54.5	12.5	67	N			1		2ck		N	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.75	755.6	29.99	761.8	72.7	22.6	67	N			4			N		0	0		Boyer, Director.
Privas, Normal School	28.97	735.7	30.01	762.2	64.4	18	44	Calm			0		0			0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.13	638.3			41.4	5.2	93	SE			2					0	0	Almost clear	Alluard, Director.
Rochefort, Naval Obs'y	29.91	759.7	29.94	760.5	63.5	17.5	64	ESE			1		10	E	E	0.47	12.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.85	758.2	29.94	760.4	60.6	15.9	53	SSE			1		10			0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			29.86	758.5	56.7	13.7	67	S			3		8		SSW	0	0	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.81	757.2	29.98	761.4	61.2	16.2	51	SSE			1		6		SE	0	0		E. Renou.
Tarbes, Normal School	29.87	758.9	30.03	762.7	66.2	19	72	W			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director
Sub-Series.																			
Fort de France, Martinique	29.86	758.5	29.89	759.2	82.4	28										0	0		L'Abbé Marchés.
Lyons			29.95	760.6	65.3	18.6	54						2			0	0		L. Jays.
Marseilles, Observatory			29.91	759.6	70.0	21.1	42	W			1		0			0	0		The Staff.
Mont-Louis	24.89	633.2	30.24	768.2	60.1	15.6	53	WSW			3		4		NW	0	0		M. Cave.
Nice			29.91	759.6	70.7	21.5	74	W			1		0			0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.69	754.2	29.97	761.2	61.9	16.6	51	SE			3		8k		SW	0	0		Marié Davy, Director
Perpignan			29.94	760.4	69.4	20.8	37	S	7.4	3.33			1		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.					55.9	13.3		W			1		5			0	0	Fair	Gen'l de Nansouty
Toulouse, Observatory	22.54	572.5			66.2	19.0	26	SE			1		2			0	0		The Staff.
Tours	29.26	743.3	29.99	761.7	62.2	16.8	52	SSW			2		10		NNW	0	0		C. Marquet.
Versailles	29.72	755.0	29.92	760.0	61.9	16.6	34	S			2		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.82	757.4	29.85	758.1	70.2	21.2	90	ESE	3.8	1.7			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèsque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèsque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.17	741.0	30.02	762.4	58.5	14.7	47	E			3		4	E		0	0		Prof. Dr. Hoh.
Berlin	29.98	761.6	30.15	765.9	58.3	14.6	49	N			1		4			0	0		Prof. Arndt.
Breslau	29.63	752.5	30.16	766.0	57.2	14.0	50	NNE			3		10			0	0		Royal University Obs'y
Carlsruhe	29.63	752.5	30.05	763.3	60.1	15.6	50	N			2		1			0	0	Light fog	Albert Sens.
Cassel	29.53	750.0	30.14	765.5	59.0	15.0	47	E			4		4	ENE		0	0		Dr. H. Möhl.
Crefeld	29.90	759.5	30.07	763.6	61.5	16.4	45	SE			4		8cs;k			0	0		Director Lose.
Emden	30.07	763.8	30.11	764.7	58.0	14.8	67	S			3		1			0.079	2.0		Prof. Prestel.
Frankfort on the Main	29.74	755.3	30.10	764.5	59.7	15.4		SE			3		5			0	0		Physical Society.
Friedrichshafen	28.68	726.0	30.02	762.4	55.8	13.2	72	NE			6		2	NE		0	0		M. Wilhelm.
Hamburg	30.07	763.6	30.13	765.4	55 9	13.3	72	S			1		8ks			0.004	0.1	Fair	Captain F. Hegemann.
Kiel	30.11	764.7	30.12	765.1	56.7	13.7	62	S			1		5			0.014	0.35		Prof. G. Karsten.
Königsberg, (Prussia)	30.05	763.2	30.13	765.3	58.1	14.5	54	NW			2		2			0.012	0.3		Prof. E Luther.
Köslin			30.12	765.0	55.9	13.3							0			0	0		H. Müller.
Leipsic, Observatory	29.74	755.5	30.17	766.2	57.6	14.2	49	ENE			1		5	NE		0	0		Prof. Bruhns.
Memel, Naval School	30.07	763.7	30.11	764.9	56.3	13.5	51	NW			1		0						Reinbrecht and Skalweit.
Neufahrwasser	30.13	765.4	30.15	765.8	56.3	14.6	63	WNW			2		6			0	0		A. Lothes.
Posen	29.91	759.6	30.19	766.9	57.7	14.3	48	NNW			1		9			0	0		Dr. Magener.
Strassburg (in Alsace)	29.60	749.4	30.05	763.2	59.9	15.5	61	NE			1		1	SE		0	0		Astronomical Observatory.
Stuttgart	29.11	739.5	30.06	763.4	57.2	14.0	54	E			1		4	E		0	0		Prof. Schoder.
Treves, (Trier)	29.50	749.2	30.02	762.5	60.1	15.6	44	E			5		1			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.58	726.0	30.08	763.9	54.7	12.6	56	NNE	5.6	2.5			7ck		E	0.008	0.2		Dr. Von Bebber.
Wustrow, Naval School	30.16	766.0	30.20	767.0	57.9	14.4	70	SSW			1		8			0.031	0.8		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.52	749.7	29.89	759.3	76.6	24.8		SW			2.5							⅛ Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.50	749.2	29.54	750.4	87.8	31.0	72	WSW	32?	14.3?			4		SW	0	0	Misty	
Deesa	29.13	740.0	29.60	751.7	91.6	33.1	59	S					2	SSW		0	0	D. clouds	
Bombay	29.66	753.4	29.70	754.4	80.3	26.8	92	S	13	5.8			10	WSW	SW	0.51	13.0	Overcast	
Poona	27.82	706.7	29.84	757.9	74.7	23.7	88	W					10		W	0.36	9.1	Overcast	
Lahore	28.76	730.5	29.49	749.1	83.0	28.3	49	NE	5.4	2.4			5			0	0	Blue sky	
Belgaum	27.22	691.5	29.77	756.2	71.9	22.2	91	W	5	2.2			4		W	0.14	3.6	Showery	
Roorkee	28.63	727.1	29.52	749.8	76.2	24.6	75	NE	2	0.9			7			0.03	0.8		
Agra	28.92	734.6	29.47	748.5	92.6	33.7	58	SW											
Nagpur	28.52	724.4	29.54	750.3	86.6	30.3	73	Calm	2.4	1.1			9		NE	0.04	1.0	D. clouds	
Lucknow																0	0	D. clouds	
Allahabad	29.19	741.3	29.49	749.1	84.4	29.1	85	Calm	0.3	0.1			5						
Patna	29.32	744.7	29.50	749.3	82.3	27.9	85	ESE	0.9	0.4			10	SE	SE	0.05	1.3	Lightning	
Hazaribagh	27.50	695.6	29.49	749.1	77.8	25.4	86	S	3.8	1.7			10			0	0	Foggy	
Cuttack	29.48	748.8	29.56	750.8	84.9	29.4	79	S	3.2	1.4			7			0.13	3.3	D. clouds	
Calcutta (Alipore)	29.50	749.3	29.52	749.8	79.7	26.5	96	SSW	9	4.0			10					Showery	
Goalpara	29.16	740.6	29.55	750.5	76.7	24.8	96	E	8.4	3.8			10			2.07	52.6	Drizzling	
Chittagong	29.59	751.6	29.68	754.0	77.9	25.5	95	SSE	0	0			10			0.40	10.2	Raining	
Sibsagar	29.31	744.5	29.65	753.0	80.2	26.8	90	NE	2.8	1.2			10			0.07	1.8	Raining	
Jubbulpore	28.25	717.6	29.60	751.8	83.2	28.5	79	N	3.2	1.4			0			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.9 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.48	748.7	29.88	758.9	64.6	18.1	59	Calm	0	0	.....	.....	9	.....	.....	0.724	18.4	.....	Prof. Giovanni Clodig.
Padua	29.77	756.2	29.88	758.9	64.8	18.2	60	NE	3.8	1.7	.....	.....	10	NE	.....	1.128	28.6	.....	Prof. Dott. Lorenzoni
Vicenza	29.71	754.5	29.89	759.3	66.4	19.1	51	S	0	0	.....	.....	9	.....	.....	0.417	10.6	.....	Conte Alm. Da Schio.
Bergamo	28.58	726.0	29.87	758.6	66.6	19.2	61	WSW	.....	.....	1	.....	2	.....	.....	0.322	8.2	.....	Prof. Trionfini Carlo.
Milan	29.37	746.0	29.88	758.9	67.8	19.9	61	WSW	.....	.....	2	.....	2	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.98	736.1	29.87	758.6	66.7	19.3	49	S	1.8	0.8	.....	.....	1	.....	.....	0.059	1.5	.....	Prof. P. F. Denza.
Mondovi	28.00	711.2	29.87	758.7	63.0	17.2	50	N	.....	.....	2	.....	0	.....	.....	0.322	8.2	.....	Prof. D. C. Bruno.
Porto Maurizio	29.69	754.0	29.90	759.5	72.0	22.2	42	SW	.....	.....	2	.....	1	.....	.....	0.008	0.2	.....	Prof. L. Vassallo.
Genoa	29.69	754.2	29.86	758.4	73.2	22.9	40	N	.....	.....	2	.....	1	NE	.....	1.571	14.5	.....	Prof. G. M. Garibaldi.
Parma	29.54	750.3	29.85	758.2	64.2	17.9	68	E	.....	.....	4	.....	7	.....	.....	1.240	31.5	.....	Prof. P. Pigorini.
Florence	29.61	752.0	29.86	758.4	67.1	19.5	58	N	.....	.....	4	.....	10	N	.....	0.331	8.4	.....	Cav. F. Meucci
Leghorn	29.76	756.0	29.85	758.1	71.4	21.9	78	NNE	3.1	1.4	.....	.....	8	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.31	719.1	29.84	757.8	60.1	15.6	71	N	.....	.....	1	.....	10	.....	.....	1.063	27.0	.....	Prof. P. Serpieri
Rome	29.68	753.9	29.85	758.3	65.7	18.7	72	NE	7.4	3.3	.....	.....	10	.....	.....	0.039	1.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.69	754.1	29.88	759.0	73.4	23.0	42	SSW	.....	.....	6	.....	7	W	.....	1.102	28.0	.....	Prof. L. Palmieri.
Lecce	29.57	751 0	29.82	757.3	77.0	25.0	70	SW	9.4	4.2	.....	.....	7	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.76	755.8	29.95	760.6	74.7	23.7	51	NW	.....	.....	6	.....	4	NW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.01	736.8	29.91	759.8	70.2	21.2	72	SW	0	0	.....	.....	8	.....	.....	1.366	34.7	.....	Prof. F. D. Conti.
Palermo	29.69	754.0	29.93	760.3	73.8	23.2	42	W	13.0	5.8	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.82	757.4	29.89	759.2	62.0	27.8	43	W	8.7	3.9	.....	.....	5	NW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.35	745.5	29.91	759.6	69.6	20.9	53	WSW	11.2	5.0	.....	.....	6	W	.....	0.894	22.7	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.59	75.16	29.79	756.6	73.0	23.1	86	NE	4.3	1.9	.....	.....	1s	.....	.....	0.014	0.35	Fair	I. Arai, Director.
Tokei (Yeddo) Observatory	29.66	753.3	29.72	754.9	77.9	25.5	90	SSW	5.4	2.4	.....	.....	1s	.....	.....	0	0	Clear	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	66.5	19.2	84	N	.....	.....	1	0	8cs	.....	E	0	0	Very cloudy	P. Ceballos.
Guadalajara	25.09	637.2	30.05	763.3	57.6	14.2	72	W	.....	.....	2	10ck	0	NW	.....	0	0	Covered	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.45	621.1	29.98	761.7	65.3	18.6	84	SW	.....	.....	1	4c	6n	NE	Calm	Inap.	Inap.	Covered	Prof. M. Leal.
Mexico	23.12	587.2	30.09	764.3	58.6	14.8	76	Calm	0	0	.....	0	10pk	.....	.....	.....	.....	Light rain	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	58.8	14.9	52	W	.....	.....	1	4cs	0	.....	.....	0	0	½ Clear	M. V. de Leon, M. E.
Puebla	23.35	593.2	29.93	760.3	56.1	13.4	80	NE	0.9	0.4	.....	5cn	5klsn	Calm	Calm	0.53	13.39	Covered	Prof. B. Gonzalez.
Tlacotalpan	29.89	759.2	29.90	759.5	78.3	25.7	91	S	.....	.....	2	3c	5ks	N	NE	0.043	1.1	Misty	M. M. Cházaro.
San Luis Potosi	24.26	616.6	30.10	764.5	63.0	17.2	38	ESE	.....	.....	.....	.....	10	.....	ESE	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.94	760.5	29.97	761.2	78.8	26.0	84	SW	.....	.....	.....	4ck	5ks	.....	.....	0.953	24.2	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	57.2	14.0	52	NE	.....	.....	1	0	4	.....	NE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.1	55.4	13.0	85	SE	1.8	0.8	.....	0	6	.....	E	0.493	12.50	Misty	Prof. P. Spina, [M. M. D. D.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.36	720.2	29.97	761.2	79.7	26.5	85	E	1.8	0.8	.....	2	3	E	E	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.02	762.5	30.02	762.5	61.2	16.2	.....	SSE	.....	.....	4	.....	.....	.....	.....	0.043	1.1	.....	
Groningen	30.01	762.2	30.07	763.6	57.6	13.9	.....	S	.....	.....	2	.....	.....	.....	.....	0.008	0.2	.....	
Helder	30.02	762.5	30.02	762.5	57.9	14 4	.....	SSE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.02	762.5	30.02	762.5	60.8	16.0	66	SE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.01	762.2	30.06	763.4	59.2	15.1	63	SSE	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	H. v d Bruk.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the cooperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.91	759.8	29.97	761.2	51.1	10.6	65	S	13.4	6.0	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.80	756.9	29.84	757.9	48.6	9.2	61	W	18	8	.....	.....	9	.....	.....	0.177	4.5	.....	
Christiania	29.82	757.5	29.97	761.2	57.4	14.1	40	SSE	0	0	.....	.....	3	.....	.....	0	0	.....	
Tromsö	29.80	744.1	29.84	745.2	48.8	8.2	83	SSW	9	4	.....	.....	10	.....	.....	1.083	27.5	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.20	767.1	30.39	771.8	72.9	22.7	81	ENE	8.7	3.9	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.03	737.4	30.01	762.2	82.4	28.0	27	SW	10.5	4.7	.....	.....	3	.....	.....	0	0	Solar halo...	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.6	30.15	765.8	75.2	24.0	56	SW	4.9	2.2	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	754.8	30.07	763.7	74.7	23.7	41	W	9.8	4.4	.....	.....	4	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.30	769.5	30.36	771.3	73 4	23.0	68	NNE	13.0	5.8	.....	.....	4	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 6 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 8° 55', E. 13°	.....	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 9° 12', E. 12° 58'	.....	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	Blue sky	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.70	754.3	30.12	765.0	58.3	14.6	47	N	9	4	.....	.....	8ck	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.68	753.8	30.10	764.4	56.7	13.7	57	NW	4	2	.....	.....	4	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.76	755.8	30.00	761.9	56.8	13.8	76	WNW	4	2	.....	.....	8k	.....	.....	.....	.....	.....	Prof. Dr. Weibrauch.
St. Petersburg	29.86	758.5	29.88	758.9	54.7	12.6	72	W	7	3	.....	.....	3k	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.25	742.9	29.85	758.1	76.8	24.9	45	SSW	4	2	.....	.....	9ck	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.84	757.8	29.91	759.6	83.1	28.4	56	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.93	760.1	29.95	760.6	80.6	27.0	66	SE	2	1	.....	.....	1	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.38	746.2	29.90	759.4	73.4	23.0	39	S	9	4	.....	.....	5ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.56?	750.7?	29.75?	755.7?	79.2	26.2	28	E	18	8	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.63	752.7	29.65	753.2	50.9	10.5	93	S	13	6	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.67	728.1	30.04	763.0	72.9	22.7	51	SE	4	2	.....	.....	8ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.30	769.5	30.21	767.4	71.4	21.9	43	SE	18	8	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.67	753.5	30.12	765.0	72.7	22.6	38	SW	11	5	.....	.....	1ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.84	757.8	30.10	764.4	72.1	22.3	54	SSW	9	4	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.20	716.7	30.14	765.5	57.6	14.2	64	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs
Nukuss	30.06	763.4	30.28	769.2	72.5	22.5	37	NNW	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.65	727.7	30.35	770.8	63.0	17.2	56	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Earnaul	29.67	753.7	30.20	767.1	44.8	7.1	80	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniselsk	29.71	754.5	30.00	761.9	46.6	8.1	91	N	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.74	755.3	29.88	758.9	67.5	19.7	91	Calm	0	0	.....	.....	9n	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 31'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.85	758.1	29.95	760.7	73.4	23	46	SW	3.8	1.7	.....	1c	.....	W	.....	.....	.....	Light halo...	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.87	758.7	29.93	760.1	77.0	25.0	45	SE	2.8	1.25	.....	10	.....	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.05	687.1	.....	.....	69.4	20.8	51	SW	3.7	1.67	.....	8	.....	.....	.....	0	0	Cloudy	Domingo Martin y Peres
Madrid, Royal Observatory	27.81	706.4	29.94	760.4	78.6	25.9	47	SW	9.7	4.34	.....	6	0	W	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.85	758.2	29.99	761.8	84.7	29.3	58	NNW	4.7	2.11	.....	1	3	E	.....	0	0	Cloudy.	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.11	739.5	29.99	761.8	67.5	19.7	70	SW	9.9	4.44	.....	5	4	.....	.....	0	0	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.00	762.1	78.0	25.6	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.93	760.2	30.02	762.6	86.4	30.2	46	SE	8.2	3.7	.....	0	6	.....	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.93	760.2	30.02	762.5	81.3	27.4	88	NE	0	0	.....	4c	2k	NE	NE	0	0	Clear?	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.54	750.2	29.58	751.2	53.2	11.8	.....	W	.....	.....	2	.....	0	.....	.....	0.079	2.0	.....	
Umea	29.92?	759.9?	29.97?	761.2?	57.2	14.0	47	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Hernosand	29.53	757.0	29.88	758.9	57.2	14.0	55	W	.....	.....	4	.....	3	.....	.....	0	0	.....	
Stockholm	29.82	757.5	30.00	762.0	54.3	12.4	68	WSW	.....	.....	2	.....	2	.....	.....	0	0	.....	
Wisby	30.01	762.2	30.07	763.7	56.1	13.4	54	W	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.89	759.3	29.97	761.2	56.7	13.7	56	SW	8.3	3.7	.....	.....	3	N	WSW	0.012	0.30	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.57	725.6	29.98	761.6	57.0	13.9	62	N	.....	.....	4	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.30	721.0	30.02	762.4	56.8	13.8	71	NE	.....	.....	2	.....	4	.....	.....	0	0	Bright	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.2 mm.; Thermometer, —3.2 cent.; Relative Humidity, —3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.92	759.9	74.5	23.6	68	SE	4	2.0	.....	4	.....	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	29.93	760.3	80.6	27.0	.....	S	.....	.....	2	.....	5	.....	.....	.....	.....	Rainy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.94	760.5	87.3	30.7	66	W	.....	.....	1	.....	1k	.....	W	0.03	0.8	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.94	760.5	30.24	768.1	50	10.0	.....	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N. B	29.86	758.4	29.92	760.0	58	14 4	82	N	5	2.2	.....	8k	2ks	SW	SW	0.16	4.1	Fair?..	G. A. Blair.
Charlottetown, P. E. Island	29.84	757.9	29.88	758.9	65	18.3	94	SW	2	0.9	.....	.....	10ks	.....	SW	0.025	0.63	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.01	762.2	30.20	767.1	46.0	7.8	78	W	.....	.....	3	0	1s	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. H. Bevis.
*Father Point, Quebec	29.95	760.7	29.97	761.2	50	10.0	82	SW	4	1.8	.....	2k	8s	W	W	0.01	0.3	Fair	J. McWilliams.
Fredericton, N. B	29.92	760.0	29.98	761.5	56.5	13.6	72	NW	9	4.0	.....	10cs	0	.....	.....	0	0	Overcast	Prof. Harrison.
*Fort Garry Manitoba	28.67	728.2	29.49	749.0	46	7.8	77	S	22	9.8	.....	2cs	2ks	SW	SW	0	0	Fair	James Stewart.
Granton, Ontario	29.18	741.2	30.32	770.1	39	3.9	100	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.73	755.1	29.86	758.4	65	18.3	95	Calm	0	0	.....	.....	8n	.....	.....	Inap.	Inap.	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.98	761.5	30.37	771.4	47.9	8.8	76	W	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.97	761.2	30.00	762.0	66	18.9	89	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.92	760 0	30.26	768.6	48	8.9	68	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.87	758.7	29.91	759.7	63.5	17.5	95	Calm	0	0	.....	7k	0	W	.....	0	0	Foggy	C. H. Rigby.
*Montreal, Quebec	29.97	761.2	30.18	766.6	47	8.3	67	NE	13	5.8	.....	0	2ks	.....	.....	0	0	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	29.59	751.6	30.30	769.6	43	6.1	83	N	5	2.2	.....	0	0	.....	.....	0.01	0.3	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.51	749.5	30.27	768.8	50.2	10.1	68	W	.....	.....	1	0	0	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.62	752.3	30.34	770.6	40	4.4	91	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.65	753.1	30.32	770.1	38	3.3	94	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.74	755.4	30.07	763.8	47	8.2	70	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.80	756.9	30.27	768.8	44	6.7	79	NW	6	2.7	.....	.....	8s	.....	NW	0.12	3.0	Fair	W. H. McIntyre.
St. Andrews, N. B	29.94	760.5	29.99	761.7	57	13.9	69	NW	0	0	.....	5k	2ks	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	29.81	757.2	29.97	761.2	57	13.1	81	N	7	3.1	.....	.....	10ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.56	750.8	30.27	768.8	52	11.9	53	W	4	1.8	.....	2k	0	W	.....	0.03	0.8	Clear	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	29.00	736.6	30.33	770.4	36.6	2.6	97	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	29.88	758 9	29.91	759.7	60	15.6	96	SW	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	T. C. Hill.
*Toronto, Ontario	29.94	760.5	30.34	770.6	43	6.1	73	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	66.0	18.9	95	S	.....	.....	.....	4k	4s	.....	.....	0.13	3.3	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From —	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From —	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.96	761.0	30.19	766.8	52	11.1	73	NW	11	4.9	.....	0	0	.....	.....	0.02	0.5	Clear	
Alpena, Michigan	29.62	752.3	30.29	769.4	40	4.4	73	NW	3	1.3	...	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.18	766.6	30.20	767.1	58	14.4	69	N	15	6.7	.....	2k	0	NW	.....	0	0	Clear	
Augusta, Georgia	29.97	761.2	30.15	765.8	70	21.1	95	Calm	0	0	.....	0	8ks	.....	S	1.52	38.6	Cloudy	
Baltimore, Maryland	30.22	767.6	30.27	768.8	56	13.3	63	N	9	4.0	.....	0	0	.....	.....	0.05	1.3	Clear	
Barnegat, New Jersey	30.19	766.8	30.21	767.3	59	15.0	70	N	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.69	703.3	29.54	750.3	49	9.4	85	SE	12	5.4	.....	10cs	0	Calm	.....	0	0	Cloudy	
Boerne, Texas	28.61	726.7	.....	.....	62	16.7	67	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.19	691.0	30.15	765.8	52	11.1	40	NW	16	7.2	.....	5k	0	W	.....	0	0	Fair	
Boston, Massachusetts	29.99	761.7	30.14	765.5	59	15.0	54	NW	17	7.6	.....	1cs	0	W	.....	Inap.	Inap.	Clear	
Brackettville, Texas	28.89	733.8	29.90	759.4	68	20.0	60	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.63	727.2	29.61	752.1	44	6.7	88	SE	24	10.7	.....	5c	0	Calm	.....	0	0	Fair	
Brownsville, Texas	29.94	760.5	30.00	762.0	73	22.8	95	N	4	1.8	.....	.....	10ks	.....	E	1.07	27.2	Cloudy	
Buffalo, New York	29.60	751.8	30.32	770.1	50	10.0	58	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.97	761.2	30.23	767.8	51	10.6	53	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Cairo, Illinois	28.77	730.7	30.16	766.1	53	11.7	78	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	47	8.3	62	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.23	640.8	30.03	762.7	61	16.1	17	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	51	10.6	59	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	36	2.2	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.15	765.8	30.16	766.1	78	22.8	81	NE	18	8.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Henry, Virginia	30.15	765.8	30.17	766.3	67	19.4	69	NW	24	10.7	.....	.....	10s	.....	NW	0.20	5.1	Cloudy	
Cape Lookout, N. Carolina	30.14	765.5	30.15	765.8	75	23.9	81	NW	8	3.6	.....	.....	10ks	.....	W	0	0	Cloudy	
Cape May, New Jersey	30.21	767.3	30.24	768.1	63	17.2	57	N	24	10.7	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.26	743.2	29.96	761.0	63	17.2	72	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.10	764.5	30.17	766.3	75	23.9	86	E	8	1.3	.....	2ck	8s	SW	Calm	0	0	Cloudy	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	47	8.3	41	SW	4	1.8	.....	0	8s	.....	Calm	0	0	Fair	
Chicago, Illinois	29.51	749.5	30.20	767.1	55	12.8	68	SW	6	2.7	.....	10cs	0	Calm	.....	0	0	Cloudy	
Cincinnati, Ohio	29.62	752.3	30.28	769.1	50	10.0	86	NE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.59	751.6	30.33	770.4	48	8.9	78	E	4	1.8	.....	5ck	0	NW	.....	0	0	Fair	
Coleman City, Texas	28.26	717.8	29.92	760.0	55	12.8	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.45	748.0	30.32	770.1	47	8.3	85	N	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Conchо, Texas	28.15	715.0	29.83	757.7	48	8.9	85	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.62	752.3	30.10	764.5	53	11.7	80	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.51	749.5	30.16	766.1	52	11.1	73	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Decatur, Texas	28.94	735.1	30.11	764.8	55	12.8	74	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.30	744.2	30.10	764.5	53	11.7	80	E	4	1.8	.....	Haze	2s	Calm	Calm	0	0	Fair	
Denver, Colorado	24 70	627.4	29.92	760.0	48	8.9	49	SE	8	3.6	.....	0	5s	.....	Calm	0	0	Fair	
Des Moines, Iowa	29.12	739.6	29.99	761.7	55	12.8	74	S	5	2.2	.....	2cs	0	W	.....	0	0	Clear	
Detroit, Michigan	29.63	752.6	30.31	769.9	47	8.3	62	NW	1	0.4	.....	0	5s;fg	.....	NW;Calm	0	0	Fair	
Dodge City, Kansas	27.30	693.4	29.53	750.0	56	13.3	57	S	16	7.2	.....	1ck	1s	S	S	0	0	Fair	
Dubuque, Iowa	29.40	746.7	30.10	764.5	51	10.6	79	S	3	1.3	.....	10k	0	S	.....	0.01	0.3	Cloudy	
Duluth, Minnesota	29.28	743.7	29.96	761.0	43	6.1	67	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	
Eagle Pass, Texas	29.31	744.5	30.05	763.3	62	16.7	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.92	760.0	29.99	761.7	58	14.4	58	NW	5	2.2	.....	.....	10s	.....	W	0.09	2.3	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	74	23.3	86	N	.....	4	5cs	8s?	E	E	0.02	0.5	Cloudy		
El Paso, Texas	.....	.....	.....	.....	70	21.1	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.59	751.6	30.32	770.1	50	10.0	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.53	750.0	30.21	767.3	36	2.2	80	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.43	722.1	30.03	762.7	60	15.6	44	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.61	752.1	48	8.9	49	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.23	640.8	30.10	764.5	66	18.9	38	SW	4	1.8	.....	5k	0	W	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.55	750.6	30.10	764.5	52	11.1	86	Calm	0	0	.....	0	0	.....	.....	0	0	Fair	
Fort Griffin, Texas	28.78	731.0	30.08	764.0	48	8.9	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.81	706.4	29.68	753.9	66	18.9	54	Calm	0	0	.....	5ck	0	NW	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.84	732.5	29.96	761.0	50	10.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.30	718.8	29.84	757.9	63	17.2	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.98	761.5	30.02	762.5	70	21.7	95	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.58	751.3	30.25	768.3	46	7.8	62	SE	5	2.2	.....	0	5s	.....	SE	0	0	Fair	
Indianapolis, Indiana	29.47	748.5	30.26	768.6	50	10.0	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.00	762.0	30.02	762.5	73	22.8	85	NE	18	8.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Jacksboro, Texas	28.91	734.3	30.04	763.0	54	12.2	80	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.08	764.0	30.11	764.8	75	23.9	81	E	4	1.8	.....	5k	0	Calm	.....	0	0	Fair	
Keokuk, Iowa	29.18	748.8	30.10	764.5	54	12.2	67	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.97	761.2	30.00	762.0	82	27.8	75	SE	5	2.2	.....	1k	1ks	Calm	Calm	0.09	2.3	Clear	
Kittyhawk, North Carolina	30.12	765.0	30.15	765.8	70	21.1	90	NE	34	15.2	.....	.....	10n	.....	NE	0.01	0.3	Light rain	
Knoxville, Tennessee	29.22	742.2	30.23	767.8	61	16.1	77	NE	4	1.8	.....	2k	0	NE	.....	0.04	1.0	Clear	
La Crosse, Wisconsin	29.30	744.2	30.04	763.0	45	7.2	92	S	2	0.9	.....	2k	0	Calm	.....	0	0	Clear	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	48	8.9	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.57	751.1	29.90	759.4	68	20.0	90	Calm	0	0	.....	0	0	.....	.....	0.34	8.6	Clear	
Lead City, Dakota	24.49	622.0	29.76	755.9	53	11.7	86	S	14	6.3	.....	10cs	0	Calm	.....	0	0	Cloudy	
Leavenworth, Kansas	29.17	740.9	30.01	762.2	52	11.1	79	S	8	3.6	.....	2c	0	SW	.....	0	0	Clear	
Los Angeles, California	29.62	752.3	29.95	760.7	58	14.4	86	NE	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.70	754.4	30.27	768.8	52	11.1	73	N	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Lynchburg, Virginia	29.57	751.1	30.25	768.3	62	16.7	61	NE	6	2.7	.....	0	8ks	.....	Calm	0	0	Cloudy	
Marquette, Michigan	29.43	747.5	30.14	765.5	43	6.1	75	S	5	2.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Mason, Texas	28.42	721.9	30.19	766.8	52	11.1	66	E	4	1.8	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.84	757.9	30.17	766.3	64	12.2	68	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.44	747.8	30.16	766.1	57	13.9	69	S	8	3.6	.....	.....	9s	.....	W	0	0	Cloudy	
Mobile, Alabama	30.04	763.0	30.08	764.0	73	22.8	90	SE	6	2.7	.....	.....	10s	.....	E	0.37	9.4	Cloudy	
Montgomery, Alabama	29.88	758.9	30.10	764.5	70	21.1	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.25	742.9	30.32	770.1	52	11.1	86	W	5	2.2	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
Mt. Washington, N. H.	23.75	603.2	30.11	764.8	27	—2.8	100	NW	30	13.4	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.68	753.9	30.22	767.6	53	11.7	86	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New Haven, Connecticut	30.08	764 0	30.20	767.1	59	15.0	65	N	12	5.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New London, Connecticut	30.12	765.0	30.17	766.3	62	16.7	56	NW	6	2.7	.....	0	1s	.....	W	Inap.	Inap.	Clear	
New Orleans, Louisiana	29.94	760.5	30.60	7620.	76	24.4	86	NE	8	3.6	.....	.....	10n;fg	.....	Calm	0.16	4.1	Light rain	
Newport, Rhode Island	30.10	764.5	30.15	765.8	61	16.1	55	NW	12	5.4	.....	1k	0	W	.....	0	0	Clear	
New York, New York	30.06	763.5	30.24	768.1	58	14.4	57	N	9	4.0	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.16	766.1	30.22	767.6	64	17.8	73	N	11	4.9	.....	10cs	0	NE	.....	0.08	2.0	Cloudy	
North Platte, Nebraska	26.89	683.0	29.40	746.7	49	9.4	73	SW	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Olympia, Washington Ter.	30.04	763.0	30.08	764.0	52	11.1	93	SW	12	5.4	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	
Omaha, Nebraska	28.77	730.7	29.82	757.4	56	13.3	75	S	12	5.4	.....	2k	Haze	SW	Calm	0	0	Fair	
Oswego, New York	29.97	761.2	30.29	769.4	53	11.7	48	N	12	5.4	.....	5k	0	N	.....	0	0	Fair	
Pembina, Dakota	28.73	729.7	29.55	750.6	42	5.6	83	S	18	8 0	.....	5c	0	W	.....	0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.21	767.3	30.26	768.6	67	13.9	68	NW	14	6.3	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.77	730.7	.....	.....	95	18.3	35	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.50	452.1	30.01	762.2	22	— 5.6	45	NW	34	15.2	.....	5cs	0	NW	.....	0.01	0.3	Fair	
Ploche, Nevada	24.10	612.1	29.87	758.7	50	10.0	26	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.48	748.8	30.31	769.9	47	8.3	92	NW	1	0.4	.....	2k	Fog	NW	Calm	0.02	0.5	Fair	
Port Huron, Michigan	29.63	752.6	30.30	769.6	47	8.3	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.01	762.0	30.09	764.3	59	15.0	60	N	6	2.7	.....	1k	0	Calm	.....	0	0	Clear	
Portland, Oregon	30.15	765.8	30.26	768.6	49	9.4	93	SE	5	2.2	.....	0	8s	.....	Calm	0.05	1.3	Fair	
Prescott, Arizona	24.82	630.4	30.18	766.6	40	4.4	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.34	745.2	30.16	766.1	58	14.4	81	SE	7	3.1	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Punta Rassa, Florida	30.03	762.7	30.04	763.0	80	26.7	82	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.64	752.8	30.00	762.0	60	15.6	55	NW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.85	758.2	30.06	763.5	75	23.9	72	N	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Rochester, New York	29.68	753.9	30.30	769.6	48	8.9	70	W	6	2.7	.....	1ck	0	Calm	.....	0	0	Clear	
†Roseburg, Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.03	0.8	.....	
Sacramento, California	29.90	759.4	29.98	761.5	66	18.8	69	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.64	752.8	30.22	767.6	62	11.1	66	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.00	762.5	30.08	764.0	75	23.9	90	SE	8	3.6	.....	8ck	2s	Calm	Calm	0	0	Cloudy	
St. Paul, Minnesota	29.55	737.9	29.88	758.9	43	6.1	75	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.58	649.7	29.91	759.7	55.4	13.1	37	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.87	746.0	29.96	761.0	61	16.1	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.92	760.0	29.99	761.7	59	15.0	100	NW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.66	753.4	30.03	762.7	56	13.3	69	E	4	1.8	.....	10k	0	NE	.....	0	0	Cloudy	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	60	15.6	65	N	15	6.7	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	29.94	760.6	30.01	762.2	53	11.7	86	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	44	6.7	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.04	763.0	30.13	765.3	73	22.8	85	NW	4	1.8	.....	6cs	5s	W	Calm	0	0	Cloudy	
Shreveport, Louisiana	29.88	758.9	30.10	764.5	57	13.9	87	NE	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Silver City, New Mexico	24.34	618.2	.....	.....	44	6.7	23	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.13	765.3	30.17	766.3	73	22.8	95	N	2	0.9	.....	10cs	0	Calm	.....	0	0	Cloudy	
Springfield, Massachusetts	30.06	763.5	30.19	766.8	59	15.0	65	W	5	2.2	.....	0	0	.....	.....	0.07	1.8	Clear	
Stockton, Texas	29.96	684.8	29.96	761.0	63	17.2	51	SE	6	2.7	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	30.08	764.0	30.13	765.3	59	15.0	65	N	16	7.2	.....	1ck	8s	W	N	0.05	1.3	Clearing	
Toledo, Ohio	29.61	752.1	30.30	769.6	50	10.0	72	NW	2	0.9	.....	0	8ks	.....	NW	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	64	17.8	45	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.10	764.5	30.13	765.3	76	24.4	91	NE	5	2.2	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Umatilla, Oregon	29.70	754.4	.....	.....	52	11.1	66	W	20	8.9	.....	.....	10s	.....	NW	0.09	2.3	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	91	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.16	740.7	29.97	761.2	62	16.7	72	SE	5	2.2	.....	5ck	0	SE	.....	0	0	Fair	
Vicksburg, Mississippi	29.86	758.4	30.11	764.5	67	19.4	84	E	2	0.9	.....	5k	0	S	.....	0.01	0.3	Fair	
Virginia City, Montana	24.06	611.1	29.54	750.3	50	10.0	45	W	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Visalia, California	29.64	752.8	30.02	762.5	51	10.6	86	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.18	766.6	30.29	769.4	57	13.9	63	NW	10	4.5	.....	2c	0	NW	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	55	12.8	56	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.08	764.0	30.15	765.8	71	21.7	90	N	5	2.2	.....	.....	10s	.....	N	0	0	Cloudy	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	51	10.6	46	SW	7	3.1	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Wood's Holl, Mass	30.07	763.8	30.12	765.0	61	16.1	60	N	14	6.3	.....	.....	8ks	.....	NW	0	0	Cloudy	
Yankton, Dakota	28.47	723.1	29.73	755.1	62	11.1	79	SE	5	2.2	.....	5ck	2s	W	W	0	0	Fair	
Yuma, Arizona	29.80	756.9	29.96	761.0	63	17.2	57	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.83	757.7	29.88	758.9	32.5	0.3	95	N	16	7.2	.....	3c	0	NW	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.98	761.5	30.00	762.0	82	27.8	78	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.94	760.5	29.96	761.0	81	27.2	87	N	.....	.....	1	0	4k	.....	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	76	E	8	1.3	.....	2c	4ks	NE	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.14	765.5	30.15	765.8	82	27.8	87	Calm	0	0	.....	2c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	85	29.4	.....	E	6.2	2.8	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	83	28.3	71	SE	.....	.....	2	4c	5k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	70.5	21.4	76	SW	1	0.4	.....	7cs	2ks	.....	.....	0.04	1.0	.....	Thomas Herran

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,480 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,070 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,070 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,110.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,806 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.93 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. †Observation not simultaneous.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.18	766.6	76	24.4	76	24.4	86	N	4	1.8	.....	.....	8	.....	SE	0.75	19.1	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	30.12‡	765.0‡	.....	.....	55	12.8	??	W;N	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.73*	755.1*	79	26.1	78.9	26.1	89	SW	.....	.....	5	.....	1k	.....	SW	0	0	.....	.....	Fair	
Adams. S. 46° 03', W. 131° 49'	29.83	757.7	66	18.9	46	7.8	92	W	.....	.....	2–4	.....	.....	.....	W	0	0	Long & rough	W	Fair	
Alliance, Leghorn, Italy	29.85‡	758.2‡	.....	.....	69	20.6	70	NE	.....	.....	2–3	.....	9	.....	NE	.....	.....	Light	NE	Threatening	
Ashuelot. Yokohama, Japan	29.50	756.9	80	26.7	80	26.7	91	S	.....	.....	4	.....	2	.....	S	.....	.....	Smooth	.....	Fair	
Alaska. Talcahuano, Chili	30.19	766.8	58	14.4	55	12.8	74	N	.....	.....	1	.....	2	.....	.....	0	0	Smooth	.....	Hazy	
Colorado. New York, N. Y.	30.23‡	767.8‡	.....	.....	59	15.0	100	NW	17	7.6	.....	.....	.....	.....	.....	0	0	.....	.....	Hazy	
Constitution, Havre, France	29.91‡	759.7‡	.....	.....	58	14.4	70	SE	.....	.....	3	.....	10	.....	SSE	.....	.....	.....	.....	Cloudy	
Despatch. Volo, Turkey	29.93‡	760.2‡	.....	.....	76	24.4	64	S	.....	.....	3	.....	8	.....	SW	.....	.....	.....	.....	Cloudy	
Essex, S. 23° 45', W. 42° 2'.	30.25	768.3	72	22.2	72	22.2	100	ENE	.....	.....	5	.....	10	.....	E	.....	.....	Mod'ate	E	Cloudy	
Franklin, Norfolk, Va.	30.30	769.6	69	20.6	66	18.9	68	NNW	8	3.6	.....	.....	8	.....	NE	0.01	0.3	.....	.....	Cloudy	
Gettysburg Gibraltar	29.96	761.0	.....	.....	77	25.0	95	WNW	.....	.....	2	.....	8	.....	Calm	0	0	Smooth	.....	Cloudy	
Guard, Bahia, Brazil	30.21	767.3	80	26.7	80	26.7	74	E	.....	.....	2	.....	5	.....	E	.....	.....	.....	.....	Fair	
Hartford, Rio de Janeiro, Brazil	30.26	768.8	.....	.....	66	18.9	89	NE	3.0	1.3	.....	.....	10	.....	.....	0.82	20.8	.....	.....	Rainy	
Marion, Naples, Italy	29.90	759.4	76	24.4	72	22.2	55	WNW	.....	.....	2	.....	2	.....	Calm	Mod'ate	Mod'ate	.....	.....	Fair	
Michigan, Erie, Pa.	30.11†	764.8†	.....	.....	49	9.4	71	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy, Yokohama, Japan	29.71‡	754.6‡	.....	.....	80	26.7	87	SSW	.....	.....	2–3	.....	2	.....	SSW	.....	.....	.....	.....	Fair	
New Hampshire, Port Royal, S. C.	30.31†	769.9†	.....	.....	76	24.4	91	NE	5	2.2	.....	.....	8	.....	W	0	0	.....	.....	Cloudy	
Onward, Callao, Peru	30.08†	764.0†	.....	.....	61	16.1	94	S	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.35	770.9	56	13.3	55	12.8	100	N	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Palos, Tientsin, China	29.92	760.0	72	22.2	73	22.8	76	NE	.....	.....	2	.....	10	.....	W	.....	.....	.....	.....	Overcast	
Plymouth. New York, N. Y.	30.16	766.1	60	15.6	58	14.4	76	N	.....	.....	2–3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, New York, N. Y.	30.22‡	767.6‡	.....	.....	58	14.4	70	NW	6.8	3.0	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	29.91	759.7	86	30.0	85	29.4	76	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.93	760.2	75	23.9	75	23.9	95	NW	.....	.....	2	.....	8	.....	NW	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	30.24‡	768.1‡	.....	.....	58	14.4	70	N	.....	.....	1	.....	2	.....	W	0	0	.....	.....	Clear	
Saratoga, League Island, Pa	30.17*	766.3*	.....	.....	59	15 0	65	N	.....	.....	3	.....	0	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.13	765.3	60	15.6	57	13.9	81	NW	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Supply, Havre, France	29.96	761.0	60	15.6	60	15.6	65	S	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Swatara, Boston, Mass.	30.14‡	765.5‡	.....	.....	60	15.6	65	NNW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Trenton, Southampton, England	29.85‡	758.2‡	.....	.....	58	14.4	76	SSW	.....	.....	4–5	.....	10	.....	W	0	0	.....	.....	Squally	
Tuscarora. Ventana Bay, Lower California	29.69	754.1	83	28.3	83	28.3	63	Calm	.....	.....	0	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia, N. 42° 28', E. 5° 10'	29.98‡	761.5‡	.....	.....	65	18.3	68	NW	.....	.....	4	.....	0	.....	.....	.....	.....	Mod'ate	NNW	Clear	
Wabash, Boston, Mass.	30.14‡	765.5‡	.....	.....	58	14.3	58	NW	8	3.6	.....	.....	2	.....	E	0	0	.....	.....	Fair	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From -	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 42° 40', W. 124° 50'		30.28*	769.1*				NNW			2		2		W		Mod'ate	NW	Hazy	Capt. Seabury.
S. S. City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 27° 54', W. 115° 55'		30.02†	762.5†	67	19.4	100	N			3		0			0	Small	NW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 37° 41', E. 147° 08'		29.59*	751.6*	78	25.6	86	W			3		ks		W		Mod'ate	W	D. clouds	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.80†	758.4†				E			3		ks			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 24', W. 147° 57'		30.33	770.4	69	20.6	90	Var.			2		6		W		2	N	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		

AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Fasnett		29.68*	753.9*	71	21.7	90	SE			2		3		S	Light	Light	NNW	Cloudy	Captain Sargent.
S. S. Ohio, N. 39° 01′, W. 73° 45′		30.19	766.8	67	19.4	89	NNE			4		7?		SE	0	Small	NNE	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 25° 41′, W. 64° 26′		30.04	763.0	84	28.9	88	SE	8	1.3			2k			0	Swell	NE	Clear	Capt. James Jorgen sen.
Schooner Florence, (N. 53° 45′ W. 52° 45′)?		30.07*	763.8*	48.0	8.9		Calm			0		10s			0			Lowering	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 23, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.04	762.9	69.8	21.0	84	NE			3		2			0	0	Fair	Dr. Ollive.
Nemours			29.94	760.5	79.7	26 5	77	W			1		3			0	0	Pretty fair.	Kesxuche.
Algiers			29.76	755.5	81.0	27.2	68	W			5		2			0	0	Fair	Tourillere.
La Calle			29.82	757.4	76.5	24.7	70	NNE			1		3			0	0	Pretty fair.	Foufrede.
Tunis			29.85	758.2	89.8	32.1	70	WSW			3		4			0	0	Cloudy	Jacques.
Sfax			29.96	761.0	84.2	29		SW			3		9			0	0	Covered	Gau.
Saida			29.90	759.5	84.6	29.2	23	W			5		4			0	0	Cloudy	Herbin.
Tebessa			29.88	758.9	81.0	27.2	27	W			6		2			0	0	Fair	Watrin.
Geriville			29.94	760.5	87.8	31.0	46	WSW			6		8			0	0	Very cloudy	Brugniaux.
Laghouat			29.99	761.8	90.7	32.6	30	SW			5		2			0.142	3.6	Fair	Bertrand.
Biskra			29.97	761.2	92.5	33.6	32	E			1		1			0.039	1.0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.47 ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.27	743.4	29.85	758.1	63.0	17.2	65	SW			4	3				0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.05	737.8	29.81	757.1	66.1	18.4	96	NE			1		10			0.118	3.0		Dr. Wierzbiski
Eperies	28.90	734.1	29.76	755.8	63.7	17.6	80	Calm			0		10s			0	0		Julius Mikoun.
Gratz	28.56	725.3	29.78	756.4	60.8	16.0	65	S			2	0				0	0		Andreas Rospini.
Hermannstadt	28.27	718.1	29.71	754.6	64.6	18.1	72	NW			1	10				0.018	0.45		Prof. A. Gottschling.
Kremtmünster	28.45	722.5	29.76	756.0	57.6	14.2	76	NE			2	2				0	0		Prof. C. Wagner
Lemberg	28.85	732.8	29.83	757.7	56.5	13.6	90	NE			2	10				0	0		Dr. T. Stanecki.
Pola	29.72	755.0	29.84	757.8	67.5	19.7	59	WSW			1	6cir				0	0		I.R.Hydrographic Office
Szathmar	29.31	744.4	29.75	755.6	74.3	23.5	59	S			2	6				0	0		Julius Csics, S. J.
Szegedin	29.52	749.8	29.80	756.8	61.5	16.4	87	S			2	10				0	0		Karl Stancel.
Trieste	29.76	755.9	29.86	758.5	70.5	21.4	79	W			1	8				0.185	4.7	Raining	P. Busin.
Vienna	29.10	739.0	29.80	757.0	57.9	14.4	77	Calm			0	1				0.264	6.7		I.R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Roval Observatory at Brussels.

Arlon																0.526	13 4		Prof. M. Passau.
Brussels	29.31	745.5	29.51	749.5	55.6	13.1	82	S			1					0.350	8.90		Royal Observatory
Furnes	29.48	748.7	29.50	749.3	54.9	12.7	82	WSW			2		10			0.079	2.0	Heavy rain.	M. E. de Cae.
Maeseyck	29.45	748.1	29.58	751.4	53.8	12.1	89	ESE			2		10			0.059	1.5		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:0 p. m., local time.

BRITISH SERIES.

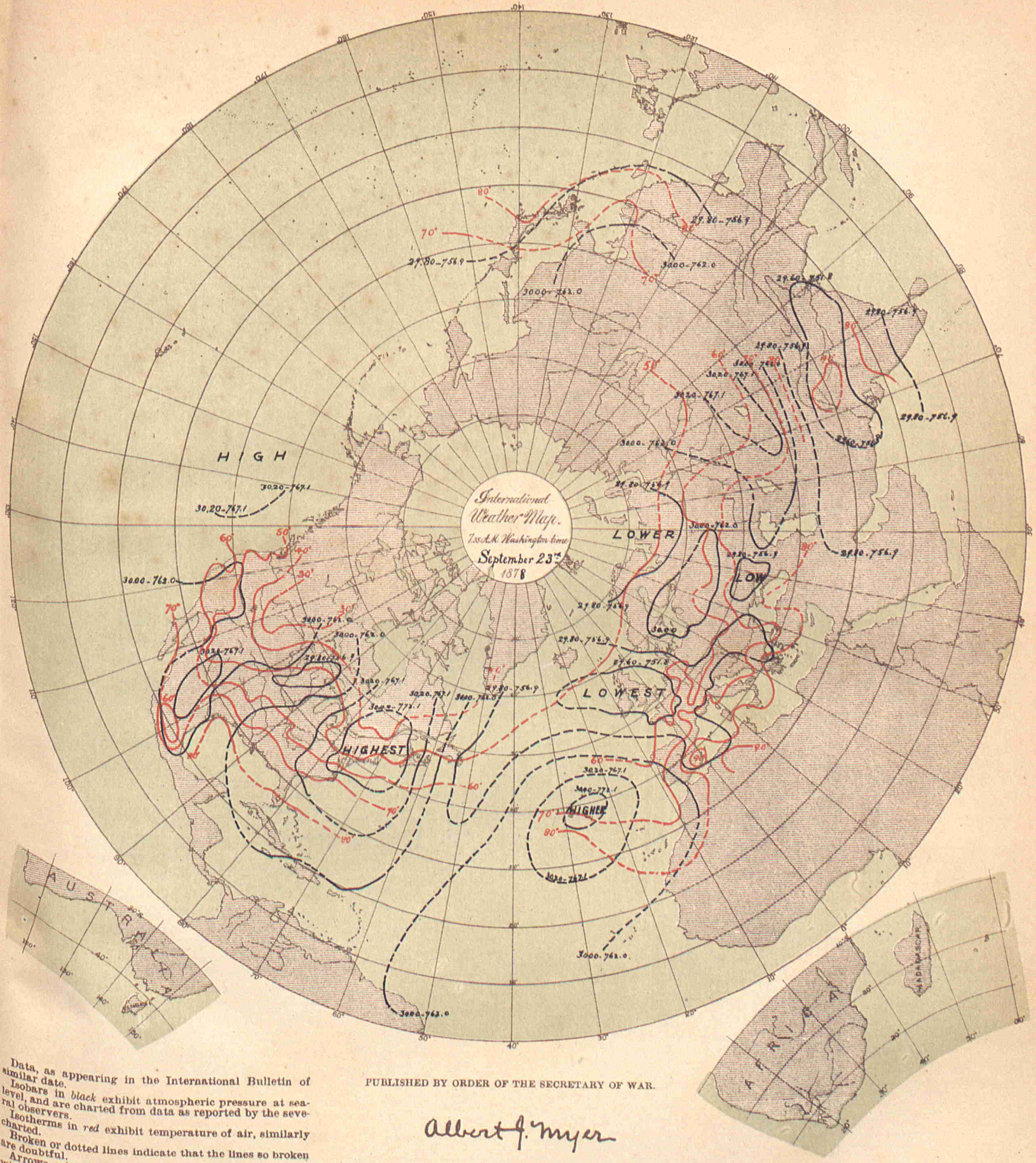
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er. 0–10.	Clouds. Amount. Low'r. 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Aberdeen	29.37	746.0	29.47	748.5	54.3	12.4		SE	28	12.5			10			0.100	2.54	Squally	W. Boswell.
Ardrossan	29.33	745.0	29.34	745.2	50	10.0		NW			2		9					Raining	George Carrick.
Armagh, Observatory			29.44	747.8	52.6	11.4		SW	8	3.6			8					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.44	747.8	51.2	10.7		WSW	23	10.3			10					Raining	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.05	737.9	29.45	748.0	50.8	10.4		W			8		10			0.73	18.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	80.5	26.9		SW			1		8					Overcast	Pvt. G. W. Roberts, A. H. O.
Cambridge, Observatory			29.46	748.3	57.0	13.9		NW			1		7					D. clouds	H. Todd.
Cardington			29.49	749.0	55.0	12.8		W			1		9					Overcast	John McLaren.
Chatham, School M. E.	29.35	745.5	29.48	748.8	55.2	12.9		Calm			0		9					D. clouds	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.07	713.0	29.53	750.0	48.0	8.9		NW			3		6					Showery	Alexander Watt.
Donaghadee	29.38	746.2	29.41	747.0	56	13.3		W			3		8					D. clouds	J. Mac Gowan.
Dover	29.44	747.8	29.46	748.3	55	12.8		NW			1		10					Overcast	J. Costello.
Eccles, (near Manchester)			29.43	747.5	52.7	11.5		NW	3.0	1.3			10					Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.37	746.0	29.59	751.6	55.9	13.3		NW			3		6					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A.H. O.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	85	29.4		SW			1		5					D. clouds	
Galway, Queen's College			29.46	748.3	51	10.6		WNW			2		10					Raining	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.94	760.5	29.99	761.7				NW			5		2					Blue sky	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	29.12	739.6	29.33	745.0	49.0	9.4		WNW			2		10					Raining	D. G. Maclean.
Great Yarmouth	29.45	748.0	29.46	748.3	53	11.7		SW			1		8					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.30	744.2	29.47	748.5	55.5	13.1		WSW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.31	744.5	29.53	750.0	56.5	13.6		NW			2		3			Blank	Blank	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.67	753.6	60	15.6		NW			2		2c			0.10	2.5	Fine	M. P. Moyle.
Holyhead	29.42	747.3	29.47	748.5	55	12.8		W			3		8					D. clouds	John Tilston.
Jersey	29.25	742.9	29.54	750.3	57.5	14.2		NW			3		7						J. Fisher.
Kew, Observatory	29.44	747.8	29.48	748.8	56.5	13.6		WNW	6	2.7			9					Threatening	The Staff.
Kingstown	29.47	748.5	29.50	749.3	53	11.7		W			4		9					Overcast	George Mitchell.
Leicester, Museum			29.47	748.5	49.6	9.8		SW			1		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.88	758.9	29.95	760.7	79.6	26.4		SW			1		6c					D. clouds	Sergt. Beckett.
Nairn	29.36	745.7	29.45	748.0	55	12.8		E			2		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	82.5	28.1		NE			3		6			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.28	743.7	29.47	748.5	53.7	12.1		SW			1		10k;d		SSE	0.263	6.68	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.96	735.6	29.48	748.8	47.9	8.8		SE			2		10			Blank	Blank	Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.55	750.6	53	11.7		NW			1		10					Gloomy	H.E. Bellamy.
Plymouth	29.47	748.5	29.54	750.3	56.0	13.3		NW			3		5					D. clouds	John Merrifield.
Roche's Point	29.57	751.1	29.61	752.1	50	10.0		NW			4		10					Showery	W. Kennedy.
Saint Ann's Head	29.37	746.0	29.53	750.0	53	11.7		WNW			3		4					Squally	John C. Walker.
Sandwick Manse, (Orkneys.)			29.60	751.8	56	13.3		ESE	31	13.9			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.76	755.9	70.0	21.1		NW			4		10					Raining	Sergt. W. H. Lyne.
Sheffield	29.18	741.2	29.46	748.3	57.1	13.9		SW			1		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth, Rectory	29.42	747.3	29.45	748.0	56.7	13.7	78	E			1		5			0.105	2.67	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.04	737.6	29.45	748.0	53.9	12.2		WSW			1		8					D. clouds	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.29	744.0	29.50	749.3	52.8	11.6		W			0–1		6			Blank	Blank	D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso			29.55	750.6	56	13.3		E			4		10					Gloomy	John Trotter.
Truro, Royal Institution			29.59	751.6	58	14.4		N			4		6					D. clouds	W. Newcombe.
Valencia, Observatory	29.63	752.6	29.66	753.4	52.6	11.4		WNW	22	9.8			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.12	739.6	48.0	8.9	88	N			2		5k			0.02	0.5		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	30.00	762.0	30.19	766.7	70.7	21.5	52	SE	12.0	5.4		0	8		ESE	0.02	0.5	Fine; cloudy	C. Meldrum.
Melbourne, Observatory	29.37	746.0	29.46	748.8	57.9	14.4	88	Calm	0	0			10			0.36	9.1	Heavy showers.	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway. Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except. in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Corrected Inches	Corrected Millimeters	Reduced Inches	Reduced Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Clouds Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20′, W. 29° 30′			30.38	771.6	82	27.8		NNE			4		2			3	NNE	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 21° 40′, W. 39° 0′			30.04	763.0	84	28.9					2		4				Confused.	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 40° 40′, W 51° 0′			29.77	756.1	73	22.8		SW			7		10			8	S	Raining	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	68.9	20.5	91	NE	.....	.....	2	.....	9ks	.....	.....	0.1	3.	.....	Mr. Ansart.
San José	26.24	666.5	.....	.....															Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.84	757.8	29.88	759.0	57.2	14.0	59	SE	.....	.....	6	.....	10	.....	.....	.....	.....	.....	
Faröe	29.70	754.3	29.72	754.8	55.6	13.1	73	SE	.....	.....	6	.....	7	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.64	752.9	29.68	753.8	54.3	12.4	89	ESE	.....	.....	4	.....	10	.....	.....	.....	.....	Foggy	
Vestervig	29.58	751.2	29.74	755.5	55.0	12.8	66	E	.....	.....	5	.....	2	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.02	737.1	29.57	751.1	58.3	14.6	76	SW	.....	.....	1	.....	10	.....	SW	0.110	2.8	Raining	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bouvallet, Director.
Avignon, Normal School	29.72	754.8	29.80	756 8	70.2	21.2	57	NNW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.05	737.9	29.67	751.7	61.3	16.3	67	SSW	.....	.....	2	.....	8kn	.....	W	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.24	742.6	29.52	749.7	68.6	14.8	74	SW	.....	.....	2	.....	10	.....	SW	0	0	Covered	Frere Eugene Marie, Director.
Besançon	28.83	732.3	29.71	754.6	63.1	17.3	62	S	.....	.....	4	.....	2	.....	SW	0.012	0.3	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.11	739.4	29.65	753.0	62.6	17	94	SW	.....	.....	4	.....	10n	.....	SW	.....	.....	Raining	A. Wagner, Director.
Brest, Naval Observatory	29.35	745.5	29.59	751.6	57.2	14.0	71	NNW	.....	.....	4	.....	8	.....	NNW	0.579	14.71	Squally	The Staff.
Carcassonne, Normal School	29.39	746.5	29.79	756.7	69.4	20.8	57	W *	.....	.....	2	.....	8	E	E	0	0	Very cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	28.94	735.0	29.49	749.0	59.4	15.2	78	SE	.....	.....	4	.....	10	NW	NW	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.28	743.8	29.60	751.7	59.4	15.2	76	SW	.....	.....	4	.....	10	SW	SW	0	0	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.35	720.1	29.67	753.6	63.3	17 4	52	SW	.....	.....	2	.....	10	.....	SW	0	0	Covered	Allnard, Director.
Commercy, Normal School	28.80	731.6	29.66	753.3	60.8	16	52	SW	.....	.....	3	.....	5sn	.....	SW	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grésque*	28.71	729.2	29.85	758.2	54.9	12.7	98	SW	.....	.....	2	.....	10	S	S	0	0	Covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.54	750.4	29.75	757.7	65.5	18.6	75	S	.....	.....	4	.....	5	.....	W	0.591	15.0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.21	742.7	29.54	750.4	54.7	12.6	83	WNW	.....	.....	1	.....	8	.....	WSW	0.069	1.75	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.85	732.7	29.74	755.5	60.8	16	89	S	.....	.....	6	.....	5	.....	S	0.024	0.60	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Galzin, Director
Mirecourt, Normal School	28.62	726.9	29.64	752.8	60.6	15.9	73	SSW	.....	.....	3	.....	5kn	.....	S W	0	0	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.56	750.9	29.78	756.4	73.0	22.8	56	N	.....	.....	4	.....	kn	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.76	730.5	29.80	756.8	67.5	19.7	41	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	24.84	631.0	.....	.....	40.8	4.9	100	W	.....	.....	4	.....	.....	.....	.....	0	0	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	29.64	752.8	29.65	753.0	60.3	15.7	84	WSW	.....	.....	4	.....	10	WSW	WSW	0	0	Covered	Lt. Decante, Director.
Rouen, Normal School	29.40	746.8	29.49	749.0	59.0	15.0	65	SSE	.....	.....	1	.....	8	.....	SW	0.071	1.8	Very cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	29.52	749.8	55.8	13.2	74	SW	.....	.....	3	.....	8	.....	NW	0.428	10.87	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.34	745.3	29.51	749.5	62.6	17.0	64	SSW	.....	.....	3	.....	8	.....	SW	0.201	5.1	.....	E. Renou.
Tarbes, Normal School	28.71	729.2	29.70	755.9	64.4	18	80	SW	.....	.....	6	.....	2	NNW	NW	0.39	10.	.....	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.91	759.6	29.85	758.3	77.0	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.68	246.	.....	L'Abbé Marchés.
Lyons	.....	.....	29.80	756.9	69.4	15.2	60	.....	.....	.....	.....	.....	8	.....	.....	0.028	0.7	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.80	756.9	72.1	22.3	55	WSW	.....	.....	1	.....	10	.....	.....	1.691	42.95	Thunder-storm	The Staff.
Mont-Louis	24.97	634.3	30.29	769.3	59.0	15.0	51	N	.....	.....	2	.....	4	.....	E	0	0	.....	M. Cave.
Nice	.....	.....	29.83	757.7	71.2	21.8	74	SW	.....	.....	1	.....	3	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.22	742.3	29.50	749.3	61.9	16.6	69	SSW	.....	.....	4	.....	7	.....	SW	0.083	2.1	.....	Marié Davy, Director
Perpignan	.....	.....	29.77	756.2	71.8	22.1	48	S	3.7	1.67	.....	.....	7	.....	SW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.38	568.4	.....	.....	40.1	4.5	.....	W	.....	.....	3	.....	10	.....	.....	0.102	2.6	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.13	739.8	29.84	758.0	64.9	18.3	69	WSW	.....	.....	1	.....	9	.....	.....	0.014	0.35	.....	The Staff.
Tours	29.36	745.8	29.56	750.8	56.8	13.8	84	SW	.....	.....	3	.....	10	.....	W	0.150	3.8	.....	C. Marquet.
Versailles	.....	.....	29.50	749.3	64.0	17.8	46	SW	.....	.....	2	.....	8	.....	.....	0.052	1.33	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.94	760.5	29.97	761.2	68.4	20.2	96	NE	3.8	1.7	.....	.....	0	.....	.....	0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèsque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèsque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.82	732.0	29 65	753.2	57.6	14.2	67	E	.....	.....	4	.....	4	WSW	.....	0	0	.....	Prof. Dr. Hoh.
Berlin	29.64	752.8	29.81	757.2	52.3	11.3	86	SE	.....	.....	1	.....	10	.....	.....	0.004	0.1	.....	Prof. Arndt.
Breslau	29.30	744.3	29.83	757.7	55.4	13.0	89	ESE	.....	.....	3	.....	10	.....	.....	0.054	1.38	.....	Royal University Obs'y
Carlsruhe	29.26	743.1	29.68	753.8	58.6	14.8	80	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Albert Senz.
Cassel	29.10	739.0	29.70	754.3	63.5	17.5	52	ESE	.....	.....	2	.....	6	E	.....	0	0	.....	Dr. H. Möhl.
Crefeld	29.39	746.4	29.55	750.5	56.3	13.5	83	SE	.....	.....	3	.....	9	.....	.....	0	0	.....	Director Lose.
Emden	29.63	752.5	29.66	753.4	57.0	13.9	67	SE	.....	.....	4	.....	10	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.34	745.1	29.69	754.2	59.9	15.5	.....	SSW	.....	.....	1	.....	10	.....	.....	0.008	0.2	Raining	Physical Society.
Friedrichshafen	28.32	719.3	29.72	755.0	59.2	15.1	74	SW	.....	.....	2	.....	7	WSW	.....	0.311	7.9	.....	M. Wilhelm.
Hamburg	29.66	753.4	29.73	755.2	57.2	14.0	65	SE	.....	.....	6	.....	6c;k	.....	.....	0	0	Fair	Captain F. Hegemann.
Kiel	29.73	755.1	29.74	755.5	57.4	14.1	58	E	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.88	759.0	29.97	761.1	55.9	13.3	61	E	.....	.....	3	.....	8	.....	.....	0.004	0.1	.....	Prof. E Luther.
Köslin	.....	.....	29.84	757.9	50.0	10.0	.....	.....	.....	.....	.....	.....	5	.....	.....	0	0	.....	H. Müller.
Leipsic, Observatory	29.38	745.0	29.83	757.7	60.6	15.9	50	SE	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	30.04	763.0	30.09	764.2	58.3	14.6	42	SE	.....	.....	2	.....	8cs	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.99	761.7	30.00	762.1	56.5	13.6	64	E	.....	.....	4	.....	10	.....	.....	0	0	.....	A. Lothes.
Posen	29.61	752.0	29.89	759.3	50.9	10.5	90	SE	.....	.....	6	.....	10	.....	.....	0.051	1.3	.....	Dr. Magener.
Strassburg (in Alsace)	29.16	740.6	29.69	754.1	65.1	18.4	62	SW	.....	.....	2	.....	7	SW	.....	0	0	.....	Astronomical Observatory.
Stuttgart	28.74	730.0	29.65	753.0	66.2	19.0	45	W	.....	.....	1	.....	5	W	.....	0.161	4.1	.....	Prof. Schoder.
Treves, (Trier)	29.07	738.3	29.58	751.4	62.2	16.8	53	W	.....	.....	7	.....	2	.....	.....	0.108	2.73	.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.28	718.2	29.75	755.7	50.5	10.3	82	NE	4.3	1.9	.....	.....	7ck	.....	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	29.85	758.2	29.89	759.2	57.0	13.9	79	SE	.....	.....	1	.....	8	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.44	747.8	29.82	757.3	82.9	28.3	.....	SW	.....	.....	2.5	.....	.....	.....	.....	.....	.....	Dusty	Dr. J. F. J. Schmidt.
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.48	749.1	29.54	750.4	87.3	30.7	56	SW	23?	10.3?	.....	.....	0	.....	.....	0	0	Misty	
Deesa	29.18	741.1	29.65	753.0	86.7	30.4	62	SSE	.....	.....	.....	.....	3	S	.....	0	0	Misty	
Bombay	29.69	754.2	29.73	755.1	79.5	26.4	97	SW	9	4.0	.....	.....	10	ENE	W	0.24	6.1	Overcast	
Poona	27.71	703.9	29.71	754.6	77.6	25.3	80	SW	.....	.....	.....	.....	10	.....	W	0	0	D. clouds	
Lahore	28.79	731.2	29.50	749.4	91.6	33.1	44	NE	3.5	1.6	.....	.....	1	.....	.....	0	0	Blue sky	
Belgaum	27.26	692.4	29.81	757.3	71.6	22.0	90	W	5	2.2	.....	.....	10	.....	W	0.13	3.3	Showery	
Roorkee	28.64	727.5	29.52	749.9	83.8	28.8	81	Calm	3	1.3	.....	.....	0	.....	.....	0	0	.....	
Agra	28.99	736.3	29.54	750.3	89.7	32.1	61	Calm	.....	.....	.....	.....	.....	.....	.....	0	0	.....	
Nagpur	28.59	726.3	29.63	752.6	80.6	27.0	81	Calm	3.6	1.6	.....	.....	7	.....	NE	0	0	Gloomy	
Lucknow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allahabad	29.22	742.1	29.52	749.9	82.2	27.9	91	Calm	1.6	0.7	.....	.....	9	.....	.....	0.02	0.5	D. clouds	
Patna	29.35	745.4	29.52	749.9	85.4	29.7	81	Calm	0.9	0.4	.....	.....	8	E	E	0.28	7.1	D. clouds	
Hazaribagh	27.57	700.2	29.58	751.2	74.6	23.7	86	W	7.5	3.4	.....	.....	10	.....	SW	0.38	9.6	Thunder-storm	
Cuttack	29.53	749.9	29.61	752.0	85.0	29.4	83	S	1.8	0.8	.....	.....	5	.....	.....	0.52	13.2	D. clouds	
Calcutta (Alipore)	29.57	751.1	29.59	751.7	83.6	28.7	88	S	8	3.6	.....	.....	10	.....	.....	0	0	Overcast	
Goalpara	29.19	741.3	29.58	751.2	75.4	24.1	98	E	25.8	11.5	.....	.....	10	.....	.....	5.89	149.6	Raining	
Chittagong	29.58	751.4	29.67	753.7	81.9	27.7	93	ESE	8.9	4.0	.....	.....	10	.....	.....	1.05	26.7	Overcast	
Sibsagar	29.36	745.7	29.69	754.2	80.7	27.1	88	ENE	4	1.8	.....	.....	10	W	W	0.18	4.6	D. clouds	
Jubbulpore	28.26	717.8	29.61	752.1	82.0	27.8	69	WNW	4.2	1.9	.....	.....	5	.....	.....	0	0	D. clouds	
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,020 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.45	748.1	29.85	758.3	64.4	18.0	69	SW	0.7	0.3			9			0	0		Prof. Giovanni Clodig.
Padua	29.69	754.1	29.80	756.8	68.7	20.4	59	SW	4.9	2.2			7	SSW		0	0		Prof. Dott. Lorenzoni
Vicenza	29.63	752.6	29.82	757.3	68.9	20.5	59	SW	3.1	1.4			4	W		0	0		Cont. Alm. Da Schio.
Bergamo	28.52	724.3	29.80	756.9	67.6	19.8	59	NW			2		6			0	0		Prof. Trionfini Carlo.
Milan	29.29	744.0	29.80	756.9	69.8	21.0	68	WSW			1		6	NW		0.398	10.1		Prof. Schiaparelli.
Moncalieri	28.90	734.1	29.79	756.7	64.9	18.3	67	SSW	2.5	1.1			6	SW		0.047	1.2		Prof. P. F. Denza.
Mondovi	27.91	708.9	29.78	756.5	63.3	17.4	62	SE			4		10			0.138	3.5		Prof. D. C. Bruno.
Porto Maurizio	29.61	752.0	29.82	757.5	71.2	21.8	50	SW			2		9	W		0.677	17.2		Prof. L. Vassallo.
Genoa	29.67	753.7	29.84	757.9	70.7	21.5	55	S			4		10	S		0	0		Prof. G. M. Garibaldi.
Parma	29.52	749.8	29.83	757.6	70.2	21.2	57	ESE			4		4			0	0		Prof. P. Pigorini.
Florence	29.61	752.2	29.87	758.6	72.5	22.5	53	W			2		10	SSW		0	0		Cav. F. Meucci
Leghorn	29.77	756.2	29.85	758.3	67.5	19.7	77	SSW	3.8	1.7			10			0.230	6.0		Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.35	720.0	29.87	758.7	62.2	16.8	65	SW			2		3			0	0		Prof. P. Serpieri
Rome	29.74	755.3	29.91	759.7	73.2	22.9	57	SW	3.1	1.4			7			0	0		Prof. P. G. S. Ferrari.
Naples, O. U	29.74	755.3	29.93	760.3	75.2	24.0	46	SW			2		3	W		0.205	5.2		Prof. L. Palmieri.
Lecce	29.67	753.5	29.91	759.8	72.9	22.7	48	NW	12.5	5.6			3			0	0		Prof. C. De Giorgi.
Cagliari	29.67	753.7	29.86	758.5	75.7	24.8	51	SE			2		0			0	0		Prof. A. Pacinotti.
Cosenza	29.66	753.2	29.97	761.2	72.9	22.7	77	W	1.8	0.8			6			0.047	1.2		Prof. F. D. Conti.
Palermo	29.70	754.3	29.95	760.6	79.5	26.4	43	E	4.9	2.2			2			0	0		Prof. G. Cacciatore.
Syracuse	29.88	758.9	29.96	760.8	77.0	25.0	55	E	7.4	3.3			5	SW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.41	746.9	29.96	761.0	72.1	22.3	50	WSW	4.9	2.2			5	SW		0.079	2.0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.75	755.6	29.95	760.7	73.5	23.1	90	NNW	1.9	0.9			10s			0.075	1.91	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.66	753.3	29.72	754.9	77.8	25.4	87	NNE	3.0	1.3			9s			0	0	Cloudy	Prof. P. V. Veeder.
Tokei (Yeddo) University																			

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					66.2	19.0	87	N			2	0	10n		E	1.749	44.4	Very cloudy	P. Ceballos.
Guadalajara	25.07	636.8	30.02	762.4	59.9	15.5	75					0	9kn		NE	0.020	0.5	Very cloudy	Prof. L. Perez.
Guanajuato																			F. Ortiz.
Leon	24.48	620.6	29.94	760.5	66 7	19.3	80	NE			1	2c	8kn	NE	Calm	0.032	0.80	Covered	Prof. M. Leal.
Mexico	23.11	587.1	30.08	764.1	59.0	15.0	90	Calm	0	0		0	10k		SE	0.29	7.3	Overcast	Central Observatory.
Pabellon, (Aguascalts)					64.2	17.9	71	N			2	1c	2k		E	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.37	593.7	30.13	765.4	57.9	14.4	88	ESE	1.5	0.7		5ckn	5s	Calm	Calm	0.10	2.42	Covered	Prof. B. Gonzalez.
Tlacotalpam	29.95	760.8	29.96	761.1	77.9	25.5	92	S			2	9cs	0	S		0.138	3.5	Misty	M. M. Chazaro.
San Luis Potosi	24.28	615.9	30.23	767.8	62.0	16.7	57	ESE					10		ESE	0.063	1.6	Covered	G. Barroeta, M. D.
Vera-Cruz	29.97	761.3	30.00	762.0	78.8	26.0	84	Calm	0	0		0	9ks			1.544	39.2	Very cloudy	Prof. J. Rossell.
Zacatecas					59.6	15.0	83	NE			1	0	5			0	0	⅘ cloudy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.36	593.4	30.12	765.1	57.2	14.0	89	SSE	0	0		0	9		E	0.122	3.10	Almost cov.	Prof. P. Spina, [M. M. D. D
Durango																			M. V. de Leon, C. E.
Colima	28.35	720.1	29.98	761.4	77.5	25.3	82	SE	0.8	0.4		0	10		NE	0.512	13.0	Covered	R. Banda, C. E.
San Juan E. Michapam																			Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,295.8 m., or 7,533.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.50	749.3	29.50	749.3	59.7	15.4		S			4					0.039	1.0		
Groningen	29.52	749.9	29.58	751.3	56.5	13.6					4					0	0		
Helder	29.50	749.2	29.50	749.2	55.6	13.1		SE			4					0.181	4.6		
Hellevoetsluis	29.52	749.8	29.52	749.8	59.5	15.3	78	S			2					0.008	0.2	Dull	H. v d Brink.
Utrecht	29.48	748.9	29.53	750.1	56.1	13.4	83	SSE			4		10						

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.82	757.5	29.88	758.9	55.8	13.2	55	WNW	2.2	1.0	.....	.....	1	.....	.....	0	0	.....	
Brönö	29.93	760.2	29.97	761.2	49.6	9.8	92	SW	4	2	.....	.....	10	.....	.....	0.067	1.7	Light rain...	
Christiania	29.84	758.0	29.99	761.7	54.0	12.2	82	SSE	4	2	.....	.....	10	.....	.....	0.020	0.5	.....	
Tromsö	29.73	755.1	29.77	756.2	44.6	7.0	88	SE	7	3	.....	.....	10	.....	.....	0.650	16.5	Light rain...	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.23	767.7	30.41	772.5	70.2	21.2	83	E	9.4	4.2	.....	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.5	30.00	762.0	72.1	22.3	40	NW	14.3	6.4	.....	.....	5	NW	.....	0	0	Solar corona	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.3	30.14	765.5	75.2	24.0	55	SW	8.7	3.9	.....	.....	4	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	755.0	30.04	763.0	68.7	20.4	47	NNW	19.9	8.9	.....	.....	5	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.34	770.7	30.41	772.5	70.5	21.4	62	NE	8.7	3.9	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, S. 8° 46′, W. 13°	.....	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, Novo Redondo, Lower Guinea	.....	.....	.....	
Sado, N. 14° 54′, W. 23° 47′	2	WSW	D. Clouds ...	F. Texeira da Silva, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	2	NE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
.....	1	.....	D. clouds.....	M T. Guimaraes, Com'd't.
.....	.....	.....	.....	

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.6	29.90	759.5	55.0	12.8	76	ESE	13	6	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.67	753.7	30.09	764.2	57.6	14.2	51	E	7	3	.....	.....	9	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.90	759.5	30.14	765.6	58.3	14.6	58	SW	2	1	.....	.....	1k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.08	764.0	30.10	764.4	56.5	13.6	70	W	11	5	.....	.....	2k	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.25	743.0	29.87	758.6	66.0	18.9	70	NNE	9	4	.....	.....	8c;ck	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.74	755.5	29.82	757.3	79.2	26.2	59	SSW	4	2	.....	.....	4ck;s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.82	757.4	29.84	757.9	77.9	25.5	64	SE	7	3	.....	.....	5	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.63	752.7	30.18	766.6	56.1	13.4	56	NNW	9	4	.....	.....	2k	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.50	749.3	29.70	754.3	73.4	23.0	52	E	4	2	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.71	754.5	29.69	754.0	49.5	9.7	87	W	13	6	.....	.....	7ks	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.51	724.2	29.88	758.9	72.5	22.5	46	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.12	765.0	30.04	762.9	71.6	22.0	47	ESE	9	4	.....	.....	4cs;ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.52	749.8	29.98	761.4	70.3	21.3	33	SSW	11	5	.....	.....	6cs	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.75	755.7	30.02	762.5	58.3	14.6	71	NW	9	4	.....	.....	10	.....	.....	.....	.....	Light rain...	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.93	734.9	29.85	758.2	66.7	19.3	35	W	13	6	.....	.....	6c;cs	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.86	758.5	30.09	764.2	74.7	23.7	21	ENE	11	5	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.52	724.4	30.21	767.2	63.3	17.4	77	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.62	752.4	30.15	765.7	50.5	10.3	55	SE	0	0	.....	.....	3	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.80	756.8	30.09	764.3	43.3	6.3	83	WNW	2	1	.....	.....	6	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.93	760.3	30.08	763.9	68.2	20.1	77	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.5 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 8′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.65	753.0	29.75	755.6	76.3	24.6	66	ENE	1.7	0.78	.....	1c	.....	W	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.82	757.3	29.87	758.7	68.7	20.4	60	NW	2.5	1.11	.....	1	7	NE	.....	0.012	0.3	Almost cov..	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.95	684.5	.....	.....	63.3	17.4	69	SW	8.1	3.61	.....	.....	9	.....	.....	0	0	Almost cov.	Domingo Martin y Perez
Madrid, Royal Observatory	27.66	702.5	29.80	756.9	73.0	22.8	34	NW	23.9	10.67	.....	3	0	SW	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.61	752.1	29.75	755.7	95.0	35.0	40	S	1.3	0.58	.....	1	3	SE	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.10	739.0	29.99	761.7	57.7	14.3	83	NW	10.6	4.72	.....	.....	10	.....	.....	0.256	6.5	Rainy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	30.00	762.0	30.07	763.6	81.2	27.3	87	Calm	0	0	.....	0	1k	.....	.....	0	0	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.92	760.1	30.02	762.5	71.6	22.0	59	WNW	19.9	8.9	.....	4	6	W	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.4	29.99	761.7	83.1	28.4	86	SW	0	0	.....	3k	3kn	S	S	0.030	0.75	D. clouds.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.6 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature.		Barometer. Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direc-tion.	Wind. Velocity.		Wind. Force.	Clouds. Amount.		Clouds. Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
Haparanda	29.81	757.1	29.85	758.1	52.9	11.6	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	29.93	760.2	29.98	761.5	57.2	14.0	55	NW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	29.94	760.5	29.99	761.8	55.8	13.2	53	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	29.86	759 0	30.06	763.5	55.4	13.0	49	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Wisby	29.98	761.4	30.04	762.9	55.0	12.8	60	NW	.....	.....	4	.....	8	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.97	761.1	30.04	763.0	57.2	14.0	45	SSW	6.9	3.1	....	.....	6	.....	WSW	0.004	0.09	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.37	720.5	29.78	756.4	55.9	13.3	81	W	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	The Observatory.
Zurich	28.15	714.9	29.77	756.2	57.0	13.9	76	NW	.....	.....	2	.....	10	.....	.....	0.339	8.6	Light rain...	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.5 mm.; Thermometer, —3.6 cent.; Relative Humidity, +16 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.83	757.7	67.6	19.8	75	N	11	5.0	.....	.....	10	.....	SW	0.118	3.0	Thunder-storm...	The Observatory.
Valona	.....	.....	30.02	762.4	70.3	21.3	.....	W	.....	.....	2	.....	5	.....	.....	1.38	35.	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut,(Syria,) Lee Obs'y	29.82	757.4	29.93	760.3	88.7	31.5	58	WSW	.....	.....	2	.....	4ck;k	.....	SW	0	0	D. clouds....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.17	766.3	30.48	774.2	56	13.8	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N B	30.32	770.1	30.38	771.6	48	8.9	78	NW	9	4.0	.....	0	0	.....	.....	0.27	6.9	Clear	G. A. Blair.
Charlottetown, P. E. Island.	30.19	766.8	30.24	768.1	53	11.7	61.	N	16	7.2	.....	0	5ks	.....	N	0.100	2.54	Fair.....	H. J. Cundall, C. E
Cornwall, Ontario	30.30	769.6	30.50	774.7	42.5	5.8	88	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	30.20	767.1	30.36	771.1	46.8	8.7	79	W	.....	.....	1	.....	.....	.....	.....	0	0	Clear.....	James Smith, M. A.
Esquimault, B. C	29.97	761 2	30.02	762.5	51.3	10.7	100	S	.....	.....	.....	.....	.....	.....	.....	....	0	Fine	H. A. Johnson.
*Father Point, Quebec	30.45	773.4	30.47	773.9	45	7.2	78	SW	11	4.9	.....	.....	10s	.....	.....	0.25	6.3	Overcast....	W. H. Bevis.
Fredericton, N. B	30.39	771.9	30.46	773.7	48.0	8.9	71	NW	8	3.6	.....	0	0	.....	.....	0.02	0.5	Clear.....	J. McWilliams.
*Fort Garry Manitoba	29.03	737.3	29.80	756.4	41	5.0	95	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.	Prof. Harrison.
Granton, Ontario	29.24	742.7	30.36	771.1	45	7.2	100	SE	.....	.....	1	5k	5n	NW	NW	0.110	2.79	Cloudy.....	James Stewart.
*Halifax, N. S	30.09	764.3	30.23	767.8	52	11.1	74	NW	16	7.2	.....	1c	0	SE	.....	0	0	Clear.....	James Grant.
Hamilton, Ontario	30.05	763.3	30.43	772.9	43.5	6.4	89	W	.....	.....	1	0	0	.....	.....	Inap.	Inap.	Clear.	F. Allison, M. A.
Heart's Content, N. F	29.78	756.1	29.76	755.9	50	10.0	89	NE	.....	.....	2	.....	10	.....	.....	0	0	Clear.	Geo. Dickson, M. A.
*Kingston, Ontario	30.14	765.5	30.48	774.2	53	11.7	88	SE	13	5.8	.....	0	0	.....	.....	1.89	48.0	Raining... ...	E. Weedon.
Little Glace Bay, N. S	30.00	762.0	30.02	762.5	51.5	10.8	79	E	18	8.0	.....	.....	10n	.....	.....	0	0	Clear.....	S. Woods, M. A.
*Montreal, Quebec	30.31	769.9	30.51	774.9	46	7.8	82	Calm	0	0	.....	0	2ks	.....	.....	.....	.....	Raining	C. H. Rigby.
*Parry Sound, Ontario	29.67	753.6	30.38	771.6	47	8.3	85	SE	11	4.9	.....	0	0	.....	.....	0	0	Fair.....	C. H. McLeod, C. E
Peterboro, Ontario	29.67	753.6	30.44	773.2	45.7	7.6	76	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Port Dover, Ontario	29.67	753.6	30.37	771.4	55	12.8	87	S	13	5.8	.....	0	0	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Hastings, N. S	30.08	764.0	30.19	765.3	53.3	11.8	.....	N	25	11.2	.....	.....	.....	.....	.....	0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.68	753.9	30.34	770.0	43	6.1	91	E	12	5.4	.....	2ck	0	NW	.....	0	0	Fine.....	Peter Grant.
*Quebec, Quebec	30.19	766.8	30.52	775.2	38	3.3	81	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	M. Payne.
*Rockliffe, Ontario	29.96	761.0	30.44	773.2	39	3.9	95	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Clear.	Capt. Ashe, R. N
St. Andrews, N. B	30.37	771.4	30.42	772.7	48	8.9	66	N	4	1.8	.....	0	0	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B	30.25	768.3	30.42	772.7	48	8.9	70	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
*Saugeen, Ontario	29.59	751.6	30.31	769.9	50	10.0	71	SE	16	7.2	.....	2cs	0	.....	.....	0	0	Clear..... ...	G. Murdock, C. E.
Stayner, Ontario	29.59	751.6	30.38	771.6	50	10.0	76	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	K. Stewart.
Stratford, Ontario	29.66	738.1	30.37	771.4	43.2	6.2	92	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	R. J. Cole.
*Sydney, C. B	30.04	763.0	30.07	763.8	53	11.7	77	N	20	8.9	.....	10s	10n	.....	N	Inap	Inap.	Clear	C. J. MacGregor, M. A.
*Toronto, Ontario	30.08	762.7	30.42	772.7	48	8.9	86	E	2	0.9	.....	0	0	.....	.....	0	0	Threatening	T. C. Hill.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Clear.	Magnetic Observatory.
Sub-Series.																			Prof. John E. Oram.
St. Johns, Newfoundland	.....	.....	.....	.....	58.0	14.4	100	NE	.....	.....	.....	5s	5n	.....	.....	0.97	24.6	Raining	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.30	769.6	30.54	775.7	43	6.1	92	Calm	0	0		0	Haze			0	0	Clear	
Alpena, Michigan	29.56	750.8	30.21	767.3	55	12.8	74	S	22	9.8		5cs	0	W		0	0	Fair	
Atlantic City, New Jersey	30.41	772.4	30.43	772.9	56	13.3	80	N	12	5.4		5k	0	E		0	0	Fair	
Augusta, Georgia	30.08	764.0	30.26	768.6	64	17.8	94	E	5	2.2			10n		E	0.07	1.8	Light rain	
Baltimore, Maryland	30.41	772.4	30.46	773.7	55	12.8	56	NE	5	2.2		2cs	Sm'e	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.43	772.9	30.45	773.4	62	16.7	56	E	20	8.9		0	2s		E	0	0	Fair	
Bismarck, Dakota	28.17	715.5	30.03	762.7	42	5.6	91	NW	16	7.2		0	8s		NW	0.10	2.5	Cloudy	
Boerne, Texas	28.55	725.2			72	22.2	95	SE	6	2.7			10s		SE	0	0	Cloudy	
Boise City, Idaho	27.25	692.1	30.21	767.3	40	4.4	65	SE	1	0.4		5c	0	Calm		0	0	Fair	
Boston, Massachusetts	30.38	771.6	30.54	775.7	51.5	10.8	57	N	7	3.1		0	Haze		Calm	0	0	Clear	
Brackettville, Texas	28.84	732.5	29.84	757.9	73	22.8	90	SE	5	2.2			10s		SE	0	0	Foggy	
Breckenridge, Minnesota	28.79	731.3	29.78	756.4	47	8.3	88	NW	9	4.0			10ks		W	0.02	0.5	Cloudy	
Brownsville, Texas	29.90	759.4	29.97	761.2	78	25.6	90	S	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.68	753.9	30.40	772.1	48	8.9	78	NE	6	2.7		0	0			0	0	Clear	
Burkes, Arizona																			
Burlington, Vermont	30.29	769.4	30.56	776.2	45	7 2	84	E	2	0.9		0	0			0	0	Clear	
Cairo, Illinois	29.64	752.8	30.02	762.5	61	16.1	77	NE	4	1.8		0	2ks		Calm	0.10	4.8	Fair	
Camp Apache, Arizona					42	5 6	58	NE			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	58	14.4	17	N			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.71	678.4	30.20	767.1	51	10.6	68	N			1	0	0			0	0	Clear	
Campo, California	27.40	696.0	29.97	761.2	38	3.3	71	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.31	769.9	30.32	770.1	71	21.7	71	NE	27	12.1		8cs	2s	S	NE	0	0	Cloudy	
Cape Henry, Virginia	30.35	770.9	30.38	771.6	68	20.0	79	NE	19	8.5		0	8s		NE	0.01	0.3	Cloudy	
Cape Lookout, N. Carolina	30.29	769.4	30.30	769.6	73	22.8	76	NE	28	12.5			10s		NE	0	0	Cloudy	
Cape May, New Jersey	30.40	772.1	30.43	772.9	56	13.3	74	NE	10	4.5		0	0			0	0	Clear	
Castroville, Texas	29.20	741.7	29.86	758.9	76	24.4	86	SE	2	0.9			10s		SE	0	0	Cloudy	
Charleston, South Carolina	30.20	767.1	30.27	768.8	71	21.7	95	E	12	5.4		0	8s		E	0.15	3.8	Fair	
Cheyenne, Wyoming	24.15	613.4	30.09	764.3	32	0.0	89	Calm	0	0		0	0			0	0	Clear	
Chicago, Illinois	29.42	747.3	30.10	764.5	57	13.9	63	S	8	3.6		8c	0	Calm		0	0	Fair	
Cincinnati, Ohio	29.51	749.6	30.16	766.1	56	13.3	63	NE	4	1.8		9c	0	W		0	0	Cloudy	
Cleveland, Ohio	29.57	751.1	30.32	770.1	47	8.3	70	SE	8	3.6		5c	0	Calm		0	0	Fair	
Coleman City, Texas	28.16	715.3	29.79	756.7	61	16.1	82	S	6	2.7		0	2s		SW	0	0	Fair	
Columbus, Ohio	29.39	746.5	30.24	768.1	51	10.6	78	E	5	2.2		5cs	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	28.00	711.2	29.60	751.8	68	20.0	84	S	8	3.3		2k	2s	S	S	0	0	Cloudy	
Corsicana, Texas	29.52	749.8	29.98	761.5	61	16.1	88	S	2	0.9		0	0			0	0	Clear	
Davenport, Iowa	29.42	747.3	30.04	763.0	57	13.9	69	S	12	5.4		4ck	0	S		0	0	Fair	
Decatur, Texas	28.77	730.7	29.91	759.7	64	17.8	83	SE	14	6.3		0	0			0	0	Clear	
Denison, Texas	29.17	740.9	29.95	760.7	60	15.6	82	SE	6	2.7		0	Haze		Calm	0	0	Clear	
Denver, Colorado	24.94	633.5	30.16	766.1	46	7.8	47	Calm	0	0		0	Haze			0	0	Clear	
Des Moines, Iowa	29.04	737.6	29.89	759.2	62	16.7	61	SE	2	0.9			10s		S	0	0	Cloudy	
Detroit, Michigan	29.59	751.6	30.26	768.6	56	13.3	69	SE	5	2.2		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.32	693.9	29.57	751.1	51	10.6	79	N	8	3.6		5cs	0	Calm		0	0	Fair	
Dubuque, Iowa	29.31	744.5	30.00	762.0	56	13.3	75	S	6	2.7		10k	0	S		0	0	Cloudy	
Duluth, Minnesota	29.07	738.4	29.73	755.1	57	13.9	87	SW	6	2.7			10n		SW	0.10	2.5	Light rain	
Eagle Pass, Texas	29.22	742.2	29.94	760.5	74	23.3	95	E	3	1.3			10ks		S	0	0	Cloudy	
Eastport, Maine	30.37	771.4	30.44	773.2	48	8.9	70	NW	16	7.2		0	0			0	0	Clear	
Edinburg, Texas					75	23.9	95	Calm			0	0	0			0	0	Foggy	
El Paso, Texas					70	21.1	40	Calm	0	0		0	0			0	0	Clear	
Erie, Pennsylvania	29.62	752.3	30.35	770.9	49	9.4	64	SE	13	5.8		0	0			0	0	Clear	
Escanaba, Michigan	29.36	745.7	30.00	762.0	59	15.0	76	S	16	7.2		5k	0	S		0	0	Fair	
Florence, Arizona	28.43	722.1	30.03	762.7	65	18.3	44	N			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.61	752.1	50	10.0	38	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.25	641.3	30.21	767.3	57	13.9	38	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.42	747.3	29.95	760.7	62	16.7	88	E	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	28.62	726.9	29.86	758.4	64	17.8	78	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.75	704.8	29.59	751.6	72	22.2	85	SW	15	6.7		0	5ks		SW	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.68	728.5	29.78	756.4	56	13.3	81	S	8	3.6		0	0			0	0	Clear	
Fredericksburg, Texas	28.25	717.5	29 75	755.6	72	22.2	76	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.96	761.0	30.00	762.0	76	24.4	95	Calm	0	0		2k	0	Calm		0	0	Clear	
Graham, Texas																			
Grand Haven, Michigan	29.51	749.5	30.16	766.1	55	12.8	68	SE	8	3.6		0	0			0	0	Clear	
Indianapolis, Indiana	29.36	745.7	30.14	765.5	55	12.8	62	E	5	2.2		0	0			0	0	Clear	
Indianola, Texas	29.97	761.2	29.99	761.7	80	26.7	87	SE	2	0.9		1k	0	Calm		0	0	Clear	
Jacksboro, Texas	28.75	730.2	29.84	757.9	65	18.3	73	S	4	1.8		0	0			0	0	Clear	
Jacksonville, Florida	30.13	765.3	30.16	766.1	77	25.0	86	E	6	2.7		10k	0	SE		0	0	Cloudy	
Keokuk, Iowa	29.37	746.0	29.98	761.5	56	13.3	75	SE	8	3.6		0	4s		Calm	0	0	Fair	
Key West, Florida	30.04	763.0	30.07	763.8	83	28.3	79	SE	8	3.6		5k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	30.34	770.6	30.36	771.1	69	20.6	70	NE	22	9.8		2k	0	E		0.23	5.8	Fair	
Knoxville, Tennessee	29.19	741.4	30.19	766.8	61	16.1	77	NE	5	2.2			10s		Calm	0	0	Cloudy	
La Crosse, Wisconsin	29.16	740.7	29.88	758.9	59	15.0	77	S	9	4.0			10s		S	0	0	Cloudy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	47	8.3	62	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.52	749.8	29.85	758.2	77	25.0	86	SE	3	1.3		5k	0	S		0	0	Fair	
Lead City, Dakota	24.88	631.9	30.15	766.8	34	1.1	79	W	9	4.0		0	Haze		Calm	0	0	Clear	
Leavenworth, Kansas	29.07	738.4	29.90	759.4	56	13.3	87	S	6	2.7		5ck	2ks	S	S	0	0	Cloudy	
Los Angeles, California	29.56	750.8	29.90	759.4	55	12.8	87	Calm	0	0			Fog		Calm	0	0	Foggy	
Louisville, Kentucky	29.58	751.3	30.14	765.5	53	11.7	73	NE	4	1.8			10s		SW	0	0	Cloudy	
Lynchburg, Virginia	29.72	754.9	30.41	772.4	59	15.0	70	NE	2	0.9		0	8ks		Calm	0	0	Cloudy	
Marquette, Michigan	29.22	742.2	29.90	759.4	58	14.4	64	S	16	7.2		10c	0	SE		0	0	Cloudy	
Mason, Texas	28.33	719.6	30.01	762.2	72	22.2	84	SE	6	2.7			10s		SE	0	0	Cloudy	
Memphis, Tennessee	29.72	754.9	30.04	763.0	62	16.7	88	NE	8	3.6		2c	0	SW		0.04	1.0	Fair	
Milwaukee, Wisconsin	29.37	746.0	30.09	764.3	56	13.3	69	S	19	8.5		5c	1s	Calm	Calm	0	0	Fair	
Mobile, Alabama	30.02	762.5	30.06	763.5	78	25.6	91	S	6	2.7		2ck	8s	W	S	0.01	0.3	Cloudy	
Montgomery, Alabama	29.84	757.9	30.07	763.8	75	23.9	81	SE	8	3.6			10s		SE	0.02	0.5	Cloudy	
Morgantown, West Virginia	29.27	743.4	30.33	770.4	55	12.8	68	E	5	2.2		5cs	0	SE		0	0	Fair	
Mt. Washington, N. H.	24.17	613.9	30.53	775.4	31	— 0.6	32	N	1	0.4		0	0			0	0	Clear	
Nashville, Tennessee	29.60	751.8	30.13	765.3	59	15.0	94	E	3	1.3			10n		SE	0.13	3.3	Light rain	
New Haven, Connecticut	30.42	772.7	30.54	775.7	50	10.0	72	NE	12	5.4		0	0			0	0	Clear	
New London, Connecticut	30.48	774.2	30.56	775.4	52	11.1	60	N	7	3.1		0	0			0	0	Clear	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	75	23.9	90	S	1	0.4		5k	Fog	Calm	Calm	0.08	2.0	Foggy	
Newport, Rhode Island	30.48	774.2	30.53	775.4	52	11.1	66	NE	7	3.1		0	0			0	0	Clear	
New York, New York	30.34	770.6	30.52	775.2	55	12.8	62	NE	12	5.4		0	Haze		NE	0	0	Clear	
Norfolk, Virginia	30.34	770.6	30.40	772.1	67	19.4	69	E	4	1.8		2k	2s	SE	SE	0	0	Fair	
North Platte, Nebraska	27.17	690.1	29.76	755.9	45	7.2	71	NW	8	3.6		0	Haze		Calm	0	0	Clear	
Olympia, Washington Ter.	29.96	761.0	30.00	762.0	49	9.4	93	S	2	0.9			10n		Calm	0.04	1.0	Light rain	
Omaha, Nebraska	28.73	729.7	29.77	756.1	59	15.0	76	SE	4	1.8			10s		SW	0	0	Cloudy	
Oswego, New York	30.17	766.3	30.50	774.7	46	7.8	84	S	10	4.5		0	Fog		S	0	0	Foggy	
Pembina, Dakota	29.01	736.8	29.84	757.9	43	6.1	92	NW	15	6.7			10s		Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er. 0—10	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Philadelphia, Pa	30.44	773.2	30.50	774.7	53	11.7	61	NE	16	7.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.75	730.2	.....	.....	63	17.2	42	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.86	452.3	30.07	763.8	21	— 6.1	57	SW	24	10.7	.....	0	Haze	.....	Calm	0	0	Hazy	
Pioche, Nevada	24.13	612.9	29.90	759.4	53	11.7	14	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.51	749.5	30.35	770.9	46	7.8	84	E	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.61	752.1	30.27	768.8	53	11.7	67	SE	3	1.3	.....	8cs	0	W	.....	0	0	Fair	
Portland, Maine	30.46	773.7	30.51	774.9	51	10.6	59	N	10	4.5	.....	0	0	.....	.....	0	0	Clear,	
Portland, Oregon	30.04	763.0	30.15	765.8	50	10.0	93	NW	2	0.9	.....	.....	10s;fg	.....	Calm	Inap.	Inap.	Cloudy	
Prescott, Arizona	24.82	630.4	30.18	766.6	45	7.2	39	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.18	741.2	29.99	761.7	62	16.7	88	S	16	7.2	.....	0	Haze	.....	Calm	0	0	Hazy	
Punta Rassa, Florida	30.09	764.3	30.11	764.8	80	26.7	82	E	8	3.6	.....	2c	0	W	.....	0.22	5.6	Clear	
Red Bluff, California	29.60	751.8	29.95	760.7	60	15.6	39	N	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.88	758.9	30.00	762.0	77	25.0	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.82	757.4	30.46	773.7	48	8.9	85	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.57	751.1	30.15	765.8	41	5.0	91	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Fair	
Sacramento, California	29.83	757.7	29.91	759.7	60	15.6	55	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.50	749.3	30.07	763.8	57	13.9	69	SE	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
St. Marks, Florida	30.10	764.5	30.11	764.8	74	23.3	90	E	4	1.8	.....	8ck	2s	S	S	0	0	Cloudy	
St. Paul, Minnesota	28.93	734.8	29.73	755.1	56	13.3	93	S	6	2.7	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	
Salt Lake City, Utah	26.76	634.3	30.00	764.3	45.0	7.2	31	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.31	744.5	29.87	758.7	74	23.3	95	Calm	0	0	.....	.....	10ks	.....	S	0	0	Cloudy	
San Diego, California	29.87	758.7	29.95	760.7	61	16.1	88	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.62	752.3	30.30	769.6	52	11.1	66	S	12	5.4	.....	10cs	0	Calm	.....	0	0	Cloudy	
Sandy Hook, New Jersey	30.46	773.7	30.49	774.4	55	12.8	74	E	23	10.3	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	29.99	761.7	30.06	763.5	54	12.2	87	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	43	6.1	43	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.11	764.8	30.20	767.1	72	22.2	90	NE	12	5.4	.....	.....	10ks	.....	NE	Inap.	Inap	Cloudy	
Shreveport, Louisiana	29.80	756.9	30.02	762.5	64	17.8	94	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Silver City, New Mexico	24.35	618.5	.....	.....	48	8.9	49	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.27	768.8	30.30	769.6	71	21.7	90	NE	10	4.5	.....	.....	10s	.....	NE	Inap	Inap.	Cloudy	
Springfield, Massachusetts	30.43	772.9	30.56	776.2	50	10.0	65	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.91	683.5	29.91	759.7	57	13.9	47	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.45	773.4	30.51	774.9	55	12.8	68	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.58	751.3	30.26	768.6	52	11.1	73	E	4	1.8	.....	5c	0	NW	.....	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	63	17.2	40	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	74	23.3	95	NE	27	12.1	.....	.....	10n	.....	NE	0.01	0.3	Light rain	
Umatilla, Oregon	29.71	754.6	.....	.....	48	8.9	78	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	44	6.7	84	S	.....	.....	4	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.12	739.6	29.89	759.2	75	23.9	81	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	76	24.4	86	NW	4	1.8	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Virginia City, Montana	24.33	618.0	29.81	757.2	28	— 2.2	66	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	
Visalia, California	29.58	751.3	29.95	760.7	53	11.7	73	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.35	770.9	30.47	773.9	55	12.8	68	NE	7	3.1	.....	5ck	0	SW	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	54	N	.....	.....	1	c	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.22	767.6	30.30	769.6	65	18.3	89	NE	10	4.5	.....	.....	10s	.....	NE	0	0	Cloudy	
Winnemucca, Nevada	25.71	653.0	30.07	763.8	41	5.0	19	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.46	773.7	30.51	774.9	57	13.9	69	N	4	1.8	.....	Haze	0	Calm	.....	0	0	Clear	
Yankton, Dakota	28.68	728.5	29.90	761.0	53	11.7	80	W	12	5.4	.....	.....	10s	.....	W	0.04	1.0	Cloudy	
Yuma, Arizona	29.67	753.6	29.84	757.9	65	18.3	62	NE	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.01	762.2	30.06	763.5	31.5	— 0.3	100	N	10	4.5	.....	4ck	4s	W	N	0.06	1.5	Snowing	J. Fortescue, W. Wood
Havana, Cuba, W. I	30.04	763.0	30.06	763.5	82	27.8	83	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.98	761.5	30.01	762.2	82	27.8	87	N	.....	.....	1	8c	4n	.....	NE	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	79	NE	6	2.7	.....	8c	2ks	E	.....	Blank	Blank	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.14	765.5	30.15	765.8	82	27.8	91	Calm	0	0	.....	8c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I	29.90	759.4	29.98	761.5	85.5	29.7	.....	SE	7.5	3.4	2	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762.2	30.02	762.5	84	28.9	71	SE	.....	.....	.....	3c	0	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.26	641.6	.....	.....	66.2	19.0	85	Calm	0	0	.....	.....	10ks	.....	.....	0.29	7.4	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.38 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.20	767.1	79	26.1	79	26.1	86	SE	4	1.8	.....	.....	5	.....	NW	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.51‡	774.9‡	.....	.....	44	6.7	92	NW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.73‡	755.1*	79.5	26.4	78.5	25.8	91	Calm	.....	.....	0	.....	7k	.....	WSW	0	0	.....	.....	Cloudy	
Adams. S. 45° 08', W. 130° 31'.....	30.10	764.5	66	18.9	45	7.2	100	SE	.....	.....	4–5	.....	.....	.....	SE	0	0	Smooth	SE	Cloudy.....	
Alliance, Leghorn, Italy.....	29.86‡	758.4‡	.....	.....	69	20.6	60	W	.....	.....	0–1	.....	10	.....	NE	.....	.....	Light	S	Showery	
Ashuelot. Yokohama, Japan	29.81	757.2	80	26.7	79	26.1	86	NNW	.....	.....	2	.....	5	.....	NNW	.....	.....	Mod'ate	S;E	Fair	
Alaska, Talcahuano, Chili	30.25	768.3	57	13.9	51	10.6	79	SSW	.....	.....	1	.....	2	.....	.....	0	0	Smooth	.....	Hazy.....	
Colorado. New York, N. Y.....	30.40‡	772.1‡	.....	.....	58	14.4	76	NE	11	4.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Constitution, Havre, France.....	29.48‡	748.8‡	.....	.....	55	12.8	93	W	.....	.....	2	.....	7	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Despatch, Volo, Turkey.....	29.77‡	756.1‡	.....	.....	80	26.7	82	WNW	.....	.....	3	.....	5	.....	NW	.....	.....	.....	.....	Fair	
Essex, S. 25° 11', W. 42° 3'.....	30.18	766.6	72	22.2	73	22.8	95	ENE	.....	.....	4	.....	10	.....	E	.....	.....	Mod'ate	ESE	Cloudy.....	
Franklin, Norfolk, Va.....	30.46	737.7	72	22.2	68	20.0	70	ENE	6	2.7	.....	.....	8	.....	SE	0.075	1.91	.....	.....	Cloudy.....	
Gettysburg Gibraltar.....	29.90‡	759.4‡	.....	.....	79	26.1	95	WNW	.....	.....	4	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Guard. Bahia, Brazil.....	30.20	767.1	79	26.1	78	25.6	65	SE	.....	.....	4	.....	2	.....	SE	.....	.....	.....	.....	Fair.....	
Hartford, Rio de Janeiro, Brazil ...	30.24	768.1	.....	.....	72	22.2	76	NW	3.0	1.3	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Marion, Naples, Italy.....	29.94	760.5	76	24.4	74	23.3	56	SSW	.....	.....	2	.....	2	.....	SW	Mod'ate	Mod'ate	.....	.....	Fair	
Michigan, Erie, Pa.....	30.15†	765.8†	.....	.....	49	9.4	63	ESE	.....	.....	6	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy. Yokohama, Japan	29.71	754.6	.....	.....	81	27.2	87	NE	.....	.....	1–2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.....	30.39†	771.9†	.....	.....	73	22.8	95	NE	19	8.5	.....	.....	8	.....	NE	0.15	3.8	.....	.....	Hazy.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	61	16.1	94	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.43	772.9	50	10.0	51	10.6	100	NE	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Palos, Tientsin, China.....	30.16	766.1	70	21.1	68	20.0	74	SE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Plymouth. New York, N. Y.....	30.52	775.2	57	13.9	55	12.8	68	NE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Powhatan, New York, N. Y.....	30.52‡	775.2‡	.....	.....	58	14.4	64	NNW	3.6	1.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	29.93	760.2	84	28.9	84	28.9	73	E	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo. Brownsville, Texas.....	29.92	760.0	78	25.6	78	25.6	95	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	30.43‡	772.9‡	.....	.....	59	15.0	65	NE	.....	.....	2	.....	2	.....	W	0	0	.....	.....	Clear.....	
Saratoga, League Island, Pa	30.38*	771.6*	.....	.....	52	11.1	86	N	.....	.....	3	.....	0	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.34	770.6	56	13.3	57	13.9	69	NE	11	4.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France.....	29.53	750.0	61	16.1	57	13.9	87	NW	.....	.....	0–1	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Swatara, Boston, Mass.....	30.51‡	774.9‡	.....	.....	56	13.3	75	NNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, Southampton, England.	29.50‡	749.3‡	.....	.....	65	18.3	63	NW	.....	.....	2	.....	8	.....	NW	0	0	.....	.....	Cloudy.....	
Tuscarora, Ventana Bay, Lower California	29.69	754.1	78	25.6	78	25.6	61	SSW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Vandalia, Barcelona, Spain	29.77‡	756.1‡	.....	.....	75	23.9	72	E	.....	.....	2	.....	2	.....	E	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.52‡	775.2‡	.....	.....	64	9.4	64	NW	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; **corrections applied at this office.** The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10. Up'er	0—10. Low'r	From— Upper.	From— Lower.		Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, N. 46° 20′, W. 124° 50′		30.13*	765.3*				W			2		10			Blank	Mod'ate	W	Overcast	Capt. Seabury.
S. S. City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 24° 46′, W. 112° 26′		29.90†	759.4†	73	22.8	95	NW			1		4		Calm	0	Small	WNW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 38° 38′, E. 152° 02′		29.71*	754.6*	68	20.0	50	NW			6		ks		NW		High; cross	NW	Squally	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.07†	761.2†				E			3		ks			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 18′, W. 158° 00′		30.26	768.6	70	21.1	90	SW			3		5		WSW		2	W	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Mersey River		29.48*	748.8*	53	11.7	80	NNW			4		3		NNW	Light			Cloudy	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.45	773.4	60	15.6	88	NE			4		2		NE	0			Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Roudle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 24° 28′, W. 63° 56′		30.03	762.7	85	29.4	88	E	15	6.7			2k		E	0.24 in or 6.1 mm.	Rough	E	Clear	Capt. James Jorgen sen.
Schooner Florence, (N. 52° 45′ W. 51° 45′)?		29.96*	761.0*	45.0	7.2		N			3.5		10s			0.63 in or 16.0 mm.			Foggy	O. T. Sherman.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 24, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.05	763.3	68.7	20.4	83	NE			5		3			0	0	Pretty fair	Dr. Ollive.
Nemours			29.93	760.3	79.2	26.2	60	W			8		3			0	0	Pretty fair	Kesxuche.
Algiers			29.72	754.8	79.9	26.6	54	W			7		2			0	0	Fair	Tourillere.
La Calle			29.71	754.6	79.7	26.5	72	NE			5		6			0	0	Cloudy	Foufrede.
Tunis			29.68	753.8	87.4	30.8	81	NW			5		3			0.012	0.3	Pretty fair	Jacques.
Sfax			29.78	756.5	89.6	32.0		WSW			5		9			0	0	Covered	Gau.
Saida			29.90	759.5	76.9	24.4	25	N			5		4			0	0	Cloudy	Herbin.
Tebessa			29.76	755.9	73.8	23.2	52	SW			8		6			0	0	Cloudy	Watrin.
Geriville			29.87	758.7	87.4	30.8	56	W			7		7			0	0	Very cloudy	Brugniaux.
Laghouat			29.93	760.2	85.3	29.6	30	SW			8		2			0.048	1.1	Fair	Bertrand.
Biskra			29.84	757.9	91.4	33.0	34	SE			3		2			0	0	Fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.17	740.9	29.70	754.3	68.4	20.2	66	NE			2		7			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.01	736.8	29.76	755.8	64.8	18.2	65	NE			1		0			0	0		Dr. Wierzbiski
Eperies	28.93	734.7	29.78	756.3	65.8	18.8	71	S			3		9k;s		N	0	0		Julius Mikolik.
Gratz	28.60	723.9	29.72	755.0	60.6	15.9	88	S			1		10			0	0		Andreas Rospini.
Hermannstadt	28.35	720.0	29.80	756.8	63.1	17.3	81	NW			1		10			0.010	0.25		Prof. A. Gottschling.
Kremtmünster	28.32	719.4	29.65	753.0	53.6	12.0	91	W			1		10			0	0		Prof. C. Wagner
Lemberg	28.80	731.4	29.75	755.6	66.2	19.0	84	NE			1		8			0.413	10.5		Dr. T. Stanecki.
Pola	29.54	750.3	29.65	753.0	70.9	21.6	69	SE			5		10s			1.098	27.9		I.R.Hydrographic Office
Szathmar	29.40	746.7	29.85	758.2	64.0	17.8	78	N			1		10			0	0		Julius Csics, S. J.
Szegedin	29.52	749.9	29.80	756.8	68.0	20.0	58	S			1		6			0	0		Karl Stancel.
Trieste	29.58	751.4	29.69	754.0	69.8	21.0	74	SSE			1		10			2.902	73.7	Thunder-storm	P. Busin.
Vienna	29.00	736.5	29.69	754.2	61.3	16.3	82	SSE			2		6			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.47	748.6	29.67	753.6	56.3	13.5	72	SSW			3		4		W;SW	0.012	0.30		Royal Observatory
Furnes	29.66	753.4	29.69	754.0	59.4	15.2	61	WSW			2		5			0	0		M. E. de Cae.
Maeseyck	29.66	750.8	29.69	754.1	58.3	14.6	70	WSW			2		7			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the cooperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

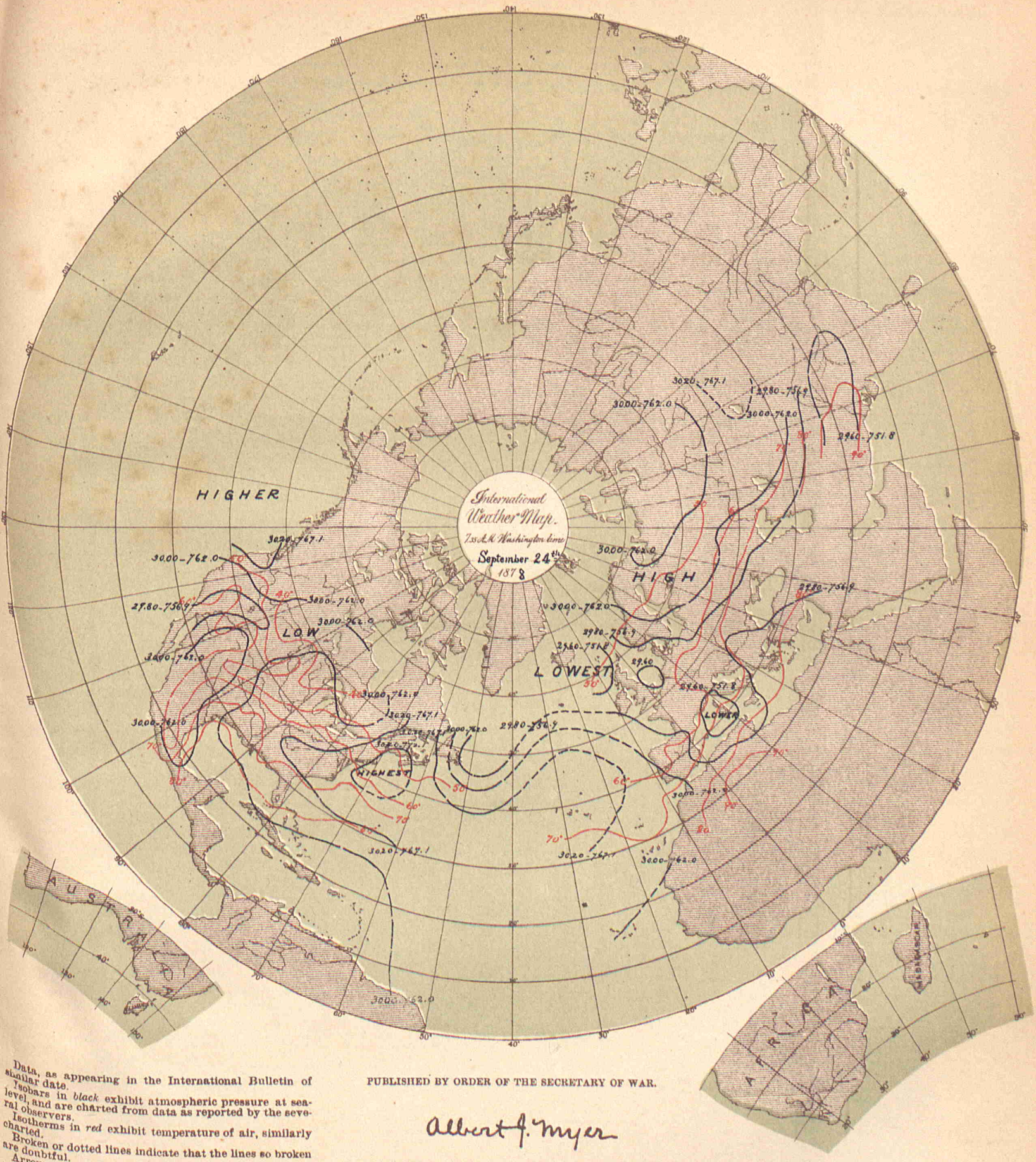
STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.64	752.8	29.74	755.4	54.9	12.7		ESE	8	3.6			10			0.470	11.94	Overcast	W. Boswell.
Ardrossan	29.64	752.8	29.66	753.4	60	15.6		N			2		8					Misty	George Carrick.
Armagh, Observatory			29.72	754.9	56.9	13.8		N	3	1.3			10					Overcast	S. Call.
Bidston, (Liverpool Obs.)			29.67	753.6	56.9	13.8		WNW	11	4.9			5					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.27	743.4	29.67	753.6	56.3	13.5		N			2		4			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84	28.9		SE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.65	753.1	55.0	12.8		WNW			1		10					Overcast	H. Todd. [H. C.
Cardington			29.74	755.4	58.0	14.4		W			1		8					Overcast	John McLaren.
Chatham, School M. E.	29.47	748.5	29.60	751.8	58.2	14.6		NW			1		6					Blue sky	Lt.Col.C.N.Martin,R.E.
Dartmoor	28.26	717.8	29.72	754.9	53.0	11.7		NW			4		5					Fine	Alexander Watt.
Donaghadee	29.65	753.1	29.68	753.9	59	15.0		SW			2		10					Overcast	J. Mac Gowan.
Dover	29.62	752.3	29.65	753.1	57	13.9		NW			1		0					Hazy	J. Costello.
Eccles, (near Manchester)			29.65	753.1	58.7	14.8		NW	1.0	0.4			5					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.52	749.8	29.74	755.4	58.0	14.4		N			2		6					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.71	754.9	29.94	760.5	83	28.3		SW			0		4					D. clouds	
Galway, Queen's College			29.72	754.9	57	13.9		W			2		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.89	752.9	29.94	760.5				W			5		1					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.47	748.5	29.68	753.9	56.9	13.8		NNE			2		10					Threatening	D. G. Maclean.
Great Yarmouth	29.58	751.3	29.59	751.6	52	11.1		WNW			3		8					Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.50	749.3	29.67	753.6	57.4	14.1		NNW			1		10					Misty	The Staff, for G. B. Airy.
Guernsey	29.46	748.3	29.68	753.9	57	13.9		NW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.81	757.2	60	15.6		NW			2		3ck			0.82	20.8	Fine	M. P. Moyle.
Holyhead	29.65	753.1	29.70	754.4	57	13.9		WNW			3		2					Blue sky	John Tilston.
Jersey	29.42	747.3	29.71	754.6	54.9	12.7		SSW			1		9					Showery	J. Fisher.
Kew, Observatory	29.63	752.6	29.67	753.6	57.0	13.9		NW	6	2.7			9					Threatening	The Staff.
Kingstown	29.70	754.4	29.72	754.9	57	13.9		NW			4		10					Overcast	George Mitchell.
Leicester, Museum			29.65	753.1	60.0	15.6		NW			1		2					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.66	753.4	29.73	755.1	86	30.0		SW			3		2c					D. clouds	Sergt. Beckett.
Nairn	29.59	751.6	29.68	753.9	57	13.9		Calm			0		2					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	82.2	27.9		NE			3		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.47	748.5	29.65	753.1	60.1	15.6		WNW			2		7ck;k		N	0.682	2.08	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.15	740.4	29.66	753.4	58.1	14.5		NW			3		2					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.68	753.9	57	13.9		Calm			0		2					Blue sky	H.E. Bellamy.
Plymouth	29.62	752.3	29.70	754.4	58.7	14.8		N			2		8					D. clouds	John Merrifield.
Roche's Point	29.73	755.1	29.76	756.4	59	15.0		N			3		8					Cloudy	W. Kennedy.
Saint Ann's Head	29.55	750.6	29.71	754.6	57	13.9		NW			2		3						John C. Walker.
Sandwick Manse, (Orkneys			29.73	755.1	56	13.3		SE	20	8.9			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.79	756.7	75.2	24.0		SW			1		0					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.38	746.2	29.67	753.1	58.7	14.8		N			2		2			0	0	Blue sky	W. F. Cooper.
Silloth, Rectory	29.64	752.8	29.67	753.6	62.0	16.7	72	Calm			0		2			0.635	16.13	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.27	743.4	29.68	753.9	56.1	13.4		WSW			1		7					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.47	748.5	29.68	753.9	58.7	14.8		W			1		6					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			29.71	754.6	60	15.6		ESE			2		6					D. clouds	John Trotter.
Truro, Royal Institution			29.76	755.9	63	17.2		N			4		4					D. clouds	W. Newcombe.
Valencia, Observatory	29.82	757.4	29.85	758.2	56.0	13.3		NW	11	4.9			10					Drizzling	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.02	737.1	47.5	8.6	94	NW			2		5k			0.48	12.2		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.8	72.0	22.2	59	ESE	13.0	5.8		1	4		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.24	742.7	29.33	745.0	54.9	12.7	71	N	11	4.9			2			0.71	18.0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20′, W. 34° 35′			30.32	770.1	82	27.8		E			3		5	S		2	E	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 21° 35′, W. 40° 5′			30.02	762.5	86	30.0		Calm			0		3				N	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 41° 30′, W 47° 15′			30.14	765.5	64	17.8		NNW			4		10			3	WNW	Overcast	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount: the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26.24	666.5			68.0	20.0	95	Calm			0		10ks			1.5	38.		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.74	755.3	29.78	756.5	59.0	15.0	76	SE			2		7						
Fanöe	29.70	754.4	29.72	754.9	58.8	14.9	76	SE			6		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.55	750.6	29.59	751.5	51.8	11.0	90	SSE			4		10						
Vestervig	29.58	751.2	29.74	755.5	55.8	13.2	89	E			2		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.17	740.8	29.72	754.8	59.4	15.2	76	S			1		10			0.244	6.2	Covered	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.54	750.2	29.61	752.2	65.1	18.4	44	W			1		5			0	0	Cloudy.	M. Giraud, Director.
Bar-sur-Seine	29.47	740.9	29.72	754.9	56.3	13.5	62	W			2		8		W	0.142	3.6	Very cloudy	C. Saillard.
Beaumette Obs y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.44	747.7	29.72	754.9	57.6	14.2	71	SW			1		5		NW	1.014	25.75	Cloudy	Frere Eugene Marie, Director.
Besançon	28.84	732.5	29.72	754.9	57.2	14	60	WSW			2		8		S	0.094	2.4	Very cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.17	740.9	29.72	754.8	55.4	13	86	SW			1		2kn		SW	0.12	3.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.47	748.5	29.71	754.6	60.1	15.6	66	NW			2		10		NW	0.266	6.75	Squally	The Staff.
Carcassonne, Normal School	29.30	744.3	29.74	755.5	61.2	16.2	58	W			2		10	NW	W	0	0	Covered	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.14	740.1	29.69	754.2	59.7	15.4	80	S			2		10	NE	NE	1.154	29.3	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.39	746.6	29.71	754.6	54.5	12.5	83	S			1		8	S	S	0.236	6.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.35	720.0	29.67	753.6	54.7	12.6	66	E			1		10			0.039	1.0	Covered	Allnard, Director.
Commercy, Normal School	28.91	734.4	29.79	756.6	54.0	12.2	67	W			1		5kn		W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.52	724.5	29.67	753.5	61.7	16.5	50	NW			2		8	NW	NW	1.425	36.2	¾ covered	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.49	746.8	29.71	754.6	55.9	13.3	60	W			1		2		WNW	0.463	11.75	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.82	732.1	29.72	755.0	57.2	14	95	NW			2		5		NW	0.252	6.40	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	29.76	756.0	29.80	756.8	53.8	12.1	87	W			1		5	W		0.08	2.	Cloudy	M. Galzin, Director
Mirecourt, Normal School	28.69	728.8	29.72	755.0	55.2	12.9	72	SSW			1		5ck		SW	0.08	2.	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.39	746.6	29.67	751.1	73.0	22.8	55	NW			1		kn	NW		0	0		Boyer, Director.
Privas, Normal School	28.68	726.0	29.03	752.0	64.0	17.8	65	S			1		1	S	S	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	24.84	630.8			36.1	2.3	100	W			1		10			0.287	7.3	Rain & fog	Allnard, Director.
Rochefort, Naval Obs'y	29.67	753.5	29.70	754.3	62.1	16.7	71	SW			1		5	SSW	SW	0.35	9.	¾ Covered	Lt. Decante, Director.
Rouen, Normal School	29.60	751.9	29.69	754.1	59.5	15.3	61	S			1		5	E	W	0.087	2.2	Cloudy	F. Lucard, Director.
Saint Malo (Port)			29.69	754.1	55.6	13.1	77	WNW			2		8		WNW	0.697	17.69	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.54	750.3	29.71	754.5	56.3	13.5	68	NE			1		5		SW	0	0		E. Renou.
Tarbes, Normal School	28.83	732.2	29.89	759.2	60.8	16	79	WSW			4		10			0.71	18.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.6	29.81	757.2	88.1	28.4										0	0		L'Abbé Marchés.
Lyons			29.69	754.0	62.1	16.7	47					7				0.012	0.3		L. Jays.
Marseilles, Observatory			29.60	751.8	64.8	18.2	61	SW			2-3	9				0	0	Cloudy	The Staff.
Mont-Louis	25.03	635.8	30.35	770.8	55.8	13.2	64	NE			4	5			SW	0.189	4.8		M. Cave.
Nice			29.61	752.2	69.8	21.0	78	SW			1	3				0.433	11.0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.42	747.3	29.70	754.3	55.4	13.0	80	Calm			0	6			SW	0.240	6.1		Marié Davy, Director
Perpignan			29.66	753.4	61.0	16.1	56	NW	18.6	8.33		8			SW	0.008	0.2		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Bayiac.
Pic du Midi, (Plantade,) H. P.	22.23	564.6			28.4	— 2.0		NW			3		10			0.496	12.6	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.03	737.4	29.75	755.6	58.5	14.7	65	W			4	8				0.126	3.20	Rainy	The Staff.
Tours	29.50	749.2	29.69	754.2	59.0	15.0	58	W			1	6			WNW	0.047	1.2		G. Marquet.
Versailles			29.71	754.6	56.8	13.8	58	SW			1	8				0.547	13.90	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.95	760.7	29.98	761.4	69.6	20.9	95	ESE	7.6	3.4		0				0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,055.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.80	731.6	29.65	753.0	57.6	14.2	65	W			4		8	W		0.04	1.	Raining	Prof. Dr. Hoh.
Berlin	29.58	751.3	29.75	755.6	64.4	18.0	62	SE			1		8			0	0		Prof. Arndt.
Breslau	29.24	742.6	29.76	756.0	66.0	18.9	54	SSE			2		1			0	0		Royal University Obs'y
Carlsruhe	29.28	743.7	29.70	754.4	57.2	14.0	71	SE			1		10			0.177	4.5		Albert Senz.
Cassel	29.14	740.1	29.74	755.4	57.6	14.2	81	ESE			2		9	ESE		0.048	1.22		Dr. H. Möhl.
Crefeld	29.50	749.4	29.67	753.5	58.6	14.8	70	S			3		9			0.04	1.		Director Lose.
Emden	29.71	754.5	29.74	755.4	58.8	14.9	73	S			3		8			0	0		Prof. Prestel.
Frankfort on the Main	29.37	746.0	29.73	755.2	56.7	13.7		SW			1		10			0.351	1.3		Physical Society.
Friedrichshafen	28.30	718.7	29.72	754.9	52.9	11.6	80	N			1		10	NNW		1.350	34.3	Raining	M. Wilhelm.
Hamburg	29.68	753.8	29.75	755.6	54.0	12.2	90	ESE			3		10			0.004	0.1	Foggy	Captain F. Hegemann.
Kiel	29.73	755.1	29.75	755.6	57.9	14.4	80	E			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.76	755.9	29.84	758.0	61.7	16.5	82	SE			2		8			0.102	2.6		Prof. E Luther.
Köslin			29.75	755.6	65.8	18.8		SE			2		2			0.048	1.1		H. Müller.
Leipsic, Observatory	29.33	745.0	29.75	755.7	60.4	15.8	68	N			1		10			0	0		Prof. Bruhns.
Memel, Naval School	29.84	758.0	29.89	759.2	56.3	13.5	83	SE			2		10n					Dust-Haze.	Reinbrecht and Skalweit.
Neufahrwasser	29.83	757.6	29.84	758.0	60.6	15.9	82	NE			2		10			0	0		A. Lothes.
Posen	29.53	750.1	29.82	757.3	60.4	15.8	74	N			2		1			0	0		Dr. Magener.
Strassburg (in Alsace)	29.19	741.3	29.72	755.0	57.7	14.3	73	Calm			0		10	SW		0.055	1.40		Astronomical Observatory.
Stuttgart	28.77	730.8	29.71	754.5	54.5	12.5	77	NW			1		10			0.379	14.7	Raining	Prof. Schoder.
Treves, (Trier)	29.17	741.0	29.69	754.1	56.3	13.5	67	W			2		10			0.002	0.04		Prof. Flesch.
Weissenburg, (Bavaria)	28.22	716.9	29.71	754.5	54.7	12.6	72	NNW	2.7	1.2			10		WNW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.78	756.3	29.82	757.3	57.9	14.4	86	SE			1		10			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.49	749.1	29.87	758.7	81.3	27.4		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.62	752.3	29.67	753.5	86.2	30.1	68	SW	24?	10.7?			3		SW	0	0	Misty	
Deesa	29.26	743.1	29.72	755.0	86.1	30.1	61	SSE					1	SSW		0	0	D. clouds	
Bombay	29.74	755.3	29.77	756.2	78.3	25.7	94	S	4	1.8			10		WSW	0.22	5.6	Overcast	
Poona	27.74	704.7	29.75	755.5	76.8	24.9	80	WSW					10		WSW	0.02	0.5	Overcast	
Lahore	28.85	732.9	29.58	751.2	90.1	32.3	44	NE	2	0.9			4			0	0	Blue sky	
Belgaum	27.27	692.5	29.81	757.2	73.6	23.1	86	W	6	2.7			7		W	0.11	2.8	D. clouds	
Roorkee	28.60	726.5	29.48	748.8	84.8	29.3	70	Calm	1	0.4			0			0	0		
Agra	29.08	738.6	29.63	752.5	91.7	33.2	57	W								0	0		
Nagpur	28.66	728.0	29.69	754.2	82.1	27.8	75	SW	3.2	1.4			10		E	0.09	2.8	Thunder-storm	
Lucknow																			
Allahabad	29.30	744.2	29.60	751.9	86.1	30.1	79	Calm	2.6	1.2			4	N		0	0	D. clouds	
Patna	29.45	747.9	29.62	752.5	85.8	29.9	85	E	1.1	0.5			10	E	E	0	0	Overcast	
Hazaribagh	27.66	702.4	29.66	753.2	76.3	25.7	77	NNW	6.7	3.0			8		W	0	0		
Cuttack	29.58	751.3	29.66	753.4	82.6	28.2	77	Calm	1.5	0.7			4			0	0	Thunder	
Calcutta (Alipore)	29.65	753.1	29.67	753.6	79.9	26.6	96	ENE	1	0.4			10			0	0	Overcast	
Goalpara	29.32	744.6	29.71	754.5	76.9	24.9	98	N	26	11.6			10			5.65	143.5	Showery	
Chittagong	29.65	753.0	29.74	755.4	79.4	26.3	91	NNE	5.3	2.4			6			0	0	Misty	
Sibsagar	29.36	745.8	29.69	754.2	83.2	28.4	83	ENE	2.4	1.1			6			0.40	10.2	D. clouds	
Jubbulpore	28.39	721.0	29.74	755.3	83.2	28.4	74	N	4.0	1.8			8			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.31	744.4	29.71	754.6	60.8	16.0	96	E	0.7	0.3	.....	.....	10	.....	.....	1.197	30.4	.....	Prof. Giovanni Clodig.
Padua	29.55	750.6	29.66	753.3	63.9	17.7	82	NE	10.5	4.7	.....	.....	10	SSW	.....	0.319	8.1	.....	Prof. Dott. Lorenzoni
Vicenza	29.53	750.0	29.71	754.7	63.4	17.4	88	N	1.8	0.8	.....	.....	8	E	.....	0.555	14.1	.....	Cont. Alm. Da Schio.
Bergamo	28.35	720.1	29.04	762.8	62.6	17.0	70	SW	.....	.....	1	.....	10	.....	.....	0.551	14.0	.....	Prof. Trionfini Carlo.
Milan	29.15	740.4	29.66	753.3	62.1	16.7	82	E	.....	.....	4	.....	10	NE	.....	1.371	34.8	.....	Prof. Schiaparelli.
Moncalieri	28.72	729.6	29.61	752.1	57.7	14.3	90	NNW	2.5	1.1	.....	.....	9	N	.....	0.120	3.2	.....	Prof. P. F. Denza.
Mondovi	27.72	704 1	29.60	751.7	59.7	15.4	76	NW	.....	.....	4	.....	7	NE	.....	1.799	45.7	.....	Prof. D. C. Bruno.
Porto Maurizio	29.36	745.8	29.58	751.3	70.0	21.1	66	SW	.....	.....	2	.....	10	SW	.....	0.630	16.0	.....	Prof. L. Vassallo.
Genoa	29.41	747.0	29.58	751.2	69.3	20.7	72	S	.....	.....	2	.....	10	SE	.....	1.020	25.9	.....	Prof. G. M. Garibaldi.
Parma	29.32	744.8	29.63	752.6	64.2	17.9	82	ENE	.....	.....	2	.....	9	.....	.....	0.303	7.7	.....	Prof. P. Pigorini.
Florence	29.37	746 0	29.62	752.4	68.5	20.3	86	E	.....	.....	2	.....	10	S	.....	0.728	18.5	.....	Cav. F. Meucci
Leghorn	29.50	749.2	29.58	751.3	72.1	22.3	77	SSW	4.9	2.2	.....	.....	4	W	.....	0.665	16.9	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.13	714.6	29.66	753.3	61.5	16.6	72	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.46	748.2	29.63	752.6	75.2	24.0	64	S	22.4	10.0	.....	.....	9	.....	.....	0.165	4.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.64	750.2	29.73	755.1	72.7	22.6	76	WSW	.....	.....	2	.....	10	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.61	752 0	29.85	758.3	75.6	24.2	71	SE	21.7	9.7	.....	.....	8	NE	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.39	746.4	29.58	751.2	77.6	25.3	46	W	.....	.....	4	.....	10	N	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	28.90	734.1	29.81	757.1	76.3	24.6	72	NW	0.7	0.3	.....	.....	5	.....	.....	0.051	1.3	.....	Prof. F. D. Conti.
Palermo	29.43	747.6	29.68	753.9	80.7	30.4	41	SW	11.9	5.3	.....	.....	9	.....	.....	0.004	0.1	.....	Prof. G. Cacciatore.
Syracuse	29.69	754.1	29.76	756.0	82.6	28.1	52	S	7.4	3.3	.....	.....	10	SW	.....	0.059	1.5	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.19	741.3	29.74	755.4	67.5	19.7	72	NNW	1.8	0.8	.....	.....	10	SW	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.82	757.4	30.02	762.5	71.2	21.8	89	E	0.7	0.3	.....	.....	0	.....	.....	0	0	Clear	I. Arai, Director. Prof. P. V. Veeder.
Tokei (Yeddo) Observatory	30.03	762.7	30.10	764.5	68.2	20.1	82	E	3.5	1.6	.....	.....	6s	.....	.....	0	0	Fair	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.8	18.8	87	N	.....	.....	1	0	9n	.....	NE	0.772	19.6	Cloudy	P. Ceballos.
Guadalajara	25.10	637.4	30.04	763.1	60.8	16.0	77	Calm	.....	.....	0	0	10n	.....	NE	0.362	9.2	Covered	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.46	621.3	29.99	761.9	68.3	17.4	86	NE	.....	.....	1	9c	0	NE	.....	0.762	19.36	Very cloudy	Prof. M. Leal.
Mexico	23.15	588.1	30.15	765.7	57.5	14.2	87	Calm	0	0	.....	0	9k	.....	.....	0.68	17.3	Cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	68.1	17.3	78	W	.....	.....	1	1c	6k	E	0	0	0	Misty	M. V. de Leon, M. E.
Puebla	23.39	594.2	29.98	761.5	55.9	13.3	88	ENE	3.6	1.6	.....	5ckn	4kn	NE	Calm	0.20	5.66	Cloudy	Prof. B. Gonzalez.
Tlacotalpam	29.99	761.8	30.01	762.1	80.2	26.8	92	SW	.....	.....	1	5cs	0	SE	.....	0	0	½ cloudy	M. M. Cházaro.
San Luis Potosi	24.28	615.9	30.14	765.6	63.0	17.2	80	E	.....	.....	.....	3	5	W	E	0.032	0.8	Misty	G. Barroeta, M. D.
Vera-Cruz	30.02	762.4	30.05	763.1	79.7	26.5	88	NW	.....	.....	.....	0	8kn	.....	.....	0.851	21.6	Raining	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	57.2	14.0	84	NE	.....	.....	1	4	4	SW	NE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.39	594.3	30.15	766.0	54.7	12.6	91	SE	0	0	.....	0	6	.....	E	0.315	8.00	Misty	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.36	720.4	29.99	761.7	78.1	25.6	87	E	0.8	0.4	.....	0	6	.....	E	0.693	17.6	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.66	753.4	29.66	753.4	59.0	15.0	.....	W	.....	.....	4	.....	.....	.....	.....	0.512	13.0	.....	H. v d Bruk.
Groningen	29.60	751.8	29.65	753.2	57.7	14.3	.....	S	.....	.....	2	.....	.....	.....	.....	0.039	1.0	.....	
Helder	29.58	751.4	29.58	751.4	56.1	13.4	.....	ESE	.....	.....	4	.....	.....	.....	.....	0.024	0.6	.....	
Hellevoetsluis	29.59	751.6	29.59	751.6	59.2	15.1	81	S	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.61	752.0	29.65	753.2	59.9	15.5	71	SW	.....	.....	3	.....	5	.....	.....	0.055	1.4	Cloudy	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low't 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.80	756 8	29.85	758.2	56.5	13.6	50	WNW	2.9	1.3	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.64	760.5	29.98	761.5	59.0	15.0	61	Calm	0	0	.....	.....	1	.....	.....	0	0	.....	
Christiania	29.84	757.9	29.98	761.6	53.2	11.8	74	WNW	4	2	.....	.....	10	.....	.....	0	0	.....	
Tromsö	30.07	763.8	30.11	764.9	45.3	7.4	77	NE	4	2	.....	.....	5	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.19	766.8	30.38	771.6	68.7	20.4	76	NE	3.1	1.4	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.96	735.6	29.97	761.2	70.3	21.3	35	NW	18.6	8.3	.....	.....	5	NW	.....	0	0	Solar corona.	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.07	763.7	30.15	765.9	77.7	25.4	50	SW	0.3	2.8	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.6	30.07	763.6	68.9	20.5	50	N	22.4	10.0	.....	.....	5	N	.....	0.008	0.2	.....	The Staff.
Ponta Delgada, (Azores)	30.30	769.6	30.37	771.4	72.0	22.2	64	NE	3.8	1.7	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell: Height scale 0—9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, Benguela, Lower Guinea	2	W	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	3	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	2	.....	D. clouds	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.39	746.4	29.80	756.8	66.4	19.1	78	SSE	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.52	749.9	29.94	760.4	57.4	14.1	70	ESE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.86	758.4	30.10	764.5	58.1	14.5	64	ESE	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.12	765.0	30.13	765.4	57.4	14.1	57	NNW	7	3	.....	.....	4cs;ks	.....	.....	.....	.....	Light clouds	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.20	741.6	29.80	756.9	74.3	23.5	35	ENE	7	3	.....	.....	7c	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.71	754.5	29.78	756.3	79.2	26.2	55	NE	4	2	.....	.....	7kn	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.76	755.8	29.78	756.3	73.8	23.2	63	NW	4	2	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.61	752.1	30.16	766.0	55.6	13.1	53	N	7	3	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.62	752.4	29.82	757.4	78.8	26.0	32	NNE	13	6	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.96	760.9	29.98	761.4	49.8	9.9	87	WSW	13	6	.....	.....	4ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.40	721.3	29.74	755.5	77.4	25.2	50	SE	4	2	.....	.....	4ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.98	761.5	29.90	759.4	73.4	23.0	41	ESE	9	4	.....	.....	4cs;s	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.52	749.7	29.98	761.4	63.9	17.7	58	ENE	2	1	.....	.....	2ks	.....	.....	.....	.....	Light clouds	Cand. Fatjanow.
Kasan	29.82	757.3	30.08	764.1	59.4	15.2	57	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.00	736.5	29.94	760.5	50.4	10.2	57	WSW	9	4	.....	.....	4ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.69	754.2	29.92	759.9	75.4	24.1	36	NE	7	3	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	28.35	720.1	30.02	762.4	65.5	18.6	65	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.48	748.7	29.99	761.8	56.1	13.4	70	SW	9	4	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.58	751.4	29.87	758.7	50.2	10.1	63	SW	2	1	.....	.....	9	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.87	758.6	30.01	762 2	55.6	13.1	99	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Raining	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.9 feet; Tashkend, 455.7 m., or 1,492.77 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660.7 m., or 2,165.27 ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.63	752.5	29.73	755.1	68.9	20.5	39	SW	4.9	2.19	.....	.....	8	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.77	756.1	29.82	757 5	59.2	15.1	81	NW	3.8	1.72	.....	.....	10	.....	.....	0.697	17.7	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	29.01	683.6	.....	.....	55.0	12.8	74	SW	5.4	2.43	.....	.....	6	.....	.....	0.059	1.5	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.67	702.7	29.84	758.0	64.8	18.2	36	NW	22.4	10.00	.....	2	6	W	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.60	751.9	29.75	755.6	80.6	27.0	39	SE	4.8	2.16	.....	3	3	NW	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.09	738.8	29.98	761.4	59.7	15.4	67	NW	11.2	5.00	.....	.....	8	.....	.....	0.177	4.5	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.97	761.3	30.04	763.0	79.8	26.6	84	ESE	2.9	1.3	.....	10c	2k	.....	.....	0.268	6.8	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.4	30.04	762.9	70.3	21.3	70	WNW	24.4	10.5	.....	2	4	W	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I	29.82	757.5	29.91	759.8	82.0	27.8	81	NE	6.5	2.90	.....	7kn	6kn	NE	NE	0.394	10.00	Overcast	Leonardo de Toledo, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 665.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.09	764.8	30.13	765.3	51.4	10.8	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	
Umea	30.11	764.7	30.16	766.0	52.9	11.6	80	SSE	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	30.04	763.1	30.10	764.4	52.7	11.5	72	S	.....	.....	2	.....	2	.....	.....	0	0	.....	
Stockholm	29.81	757.1	29.98	761.6	55.6	13.1	85	E	.....	.....	6	.....	10	.....	.....	0.146	3.7	.....	
Wisby	29.83	757.7	29.89	759.2	53.6	12.0	91	ESE	.....	.....	6	.....	10	.....	.....	0.055	1.4	.....	
Sub-Series.																			
Upsala	29.92	760.0	30.00	761.9	55.2	12.9	72	ENE	9.2	4.1	.....	.....	10	.....	E	0.057	1.45	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.28	718.2	29.70	754.3	56.3	13.5	60	N	.....	.....	1	.....	10	.....	.....	0.228	5.8	Covered.	The Observatory.
Zurich	28.13	714.5	29.78	756.4	50.4	10.2	91	N	.....	.....	1	.....	10	.....	.....	1.299	33.0	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —8.5 m.m.; Thermometer, —3.3 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.85	758.1	73.8	23.2	74	SW	9	4.0	.....	.....	6	.....	WSW	0	0	.....	The Observatory.
Valona	.....	.....	29.91	759.6	79.3	26.3	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.77	756.1	29.88	759.0	86.5	30.3	54	WNW	.....	.....	2	.....	2ks	.....	W	0	0	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.84	757.9	30.14	765.5	56	13.3	.....	S	5	2.2	.....	.....	10n	.....	SW	Inap.	Inap.	Light rain...	W. R. Bigg.
*Chatham, N B	30.32	770.1	30.38	771.6	41	5.0	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island	30.31	769.9	30.35	770.9	54	12.2	66	W	4	1.8	.....	0	0	.....	.....	0.140	3.56	Clear.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.94	760.5	30.13	765.3	54.2	12.3	79	S	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	30.21	767.3	30.37	771.4	43.5	6.4	79	W	.....	.....	1	.....	.....	.....	.....	0	0	Fine.....	H. A. Johnson.
Esquimault, B. C	29.98	761.5	30.03	762.7	42.3	5.7	100	Calm	.....	.....	.....	.....	1cs	0	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	30.28	769.1	30.30	769.6	50	10.0	61	SW	13	5.8	.....	5c	Haze	Calm	Calm	0	0	Fair.....	J. McWilliams.
Fredericton, N. B	30.36	771.1	30.43	772.9	39.1	3.9	91	NW	1	0.4	.....	0	Fog	.....	.....	0	0	Foggy.....	Prof. Harrison.
*Fort Garry Manitoba	29.14	740.1	29.99	761.7	31	1.1	89	S	8	3.6	.....	2c	2s	S	S	0	0	Fair.....	James Stewart.
Granton, Ontario	28.95	735.3	30.03	762.7	60	15.6	100	SW	.....	.....	2	.....	10n	.....	.....	0.22	5.6	Cloudy.....	James Grant.
*Halifax, N. S	30.21	767.3	30.35	770.9	52	11.1	70	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	F. Allison, M. A.
Hamilton, Ontario	29.71	754.6	30.05	763.3	62.6	16.9	87	SW	.....	.....	5	9ck	0	SW	.....	.....	.....	Drizzling....	Geo. Dickson, M. A.
Heart's Content, N. F	29.63	752.6	29.66	753.4	45	7.2	100	N	.....	.....	5	.....	10	.....	.....	0.60	15.2	Raining.....	E. Weedon.
*Kingston, Ontario	29.81	757.2	30.14	765.5	57	13.9	91	S	23	10.3	.....	.....	10ks	.....	S	0.14	3.6	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S	30.18	766.6	30.22	767.6	55.8	13.2	58	N	14	6.3	.....	1k	0	N	.....	0.13	3.3	Fair.....	C. H. Rigby.
*Montreal, Quebec	30.00	762.0	30.20	767.1	54	12.2	70	W	13	5.8	.....	5k	2ks	.....	.....	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	29 97	761.2	58	14.4	88	SW	20	8.9	.....	2cs	2ks	W	W	0.37	9.4	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.32	744.7	30.06	763.5	57.7	14.3	87	Calm	.....	0	.....	.....	10n	.....	.....	0	0	Overcast.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.40	746.7	30.08	764.0	61	16.1	94	S	20	8.9	.....	.....	10n	.....	.....	0.02	0.5	Light rain...	H. Morgan.
Port Hastings, N. S	30.24	768.1	30.30	769.6	45.5	7.5	.....	N	12	5.4	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.43	747.5	30.00	763.5	63	17.2	94	SW	20	8.9	.....	.....	10n	.....	SW	0.11	2.8	Light rain...	M. Payne.
*Quebec, Quebec	30.00	762.0	30.33	770.4	44	6.7	76	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.53	750.0	29.99	761.7	50	10.0	89	E	8	3.6	.....	.....	10s	.....	SE	0.05	1.3	Heavy rain.	W. H. McIntyre.
St. Andrews, N. B	30.36	770.9	30.40	772.1	46	7.8	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.24	768.1	30.41	772.4	47	8.3	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	29.98	761.5	60	15.6	81	W	27	12.1	.....	5k	0	.....	.....	0.02	0.5	Fair.....	K. Stewart.
Stayner, Ontario	29.25	742.9	30.01	762.2	61	16.1	79	NW	10	4.5	.....	5k	2n	W	W	0.09	2.3	Cloudy.....	R. J. Cole.
Stratford, Ontario	28 76	730.5	30.01	762.2	59.8	15.4	97	W	14	6.3	.....	.....	10n	.....	.....	0.306	7.77	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.21	767.3	30.24	768.1	56	13.3	56	NW	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	T. C. Hill.
*Toronto, Ontario	29.69	754.1	30.06	763.5	57	13.9	96	SW	10	4.5	.....	.....	10n	.....	SW	0.05	1.3	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	50.0	10.0	100	NE	.....	.....	.....	5ks	5sn	.....	.....	0.74	18.8	Light rain...	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and these telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.08	764.0	30.31	769.9	56	13.3	75	S	10	4.5	.....	.....	10s	.....	S	0	0	Cloudy	
Alpena, Michigan	29.34	745.2	29.98	761.5	52	11.1	86	SW	10	4.5	.....	2cs	2k	SW	W	0.21	5.3	Fair	
Atlantic City, New Jersey	30.28	769.1	30.29	769.4	68	20.0	84	SE	18	8.0	.....	10k	0	SE	.....	Inap.	Inap.	Cloudy	
Augusta, Georgia	30.02	762.5	30.20	767.1	71	21.7	95	NE	1	0.4	.....	.....	8s;fg	.....	E; NE	1.95	49.5	Cloudy	
Baltimore, Maryland	30.28	767.8	30.28	769.1	65	18.3	89	E	3	1.3	.....	.....	10s	.....	SW	0.02	0.5	Threatening	
Barnegat, New Jersey	30.29	769.4	30.31	769.9	67	19.4	74	SE	16	7.2	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Bismarck, Dakota	28.04	712.2	29.89	759.2	50	10.0	52	E	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Boerne, Texas	28.62	726.9	.....	.....	77	25.0	91	SE	3	1.3	.....	8k	0	SE	.....	0	0	Cloudy	
Boise City, Idaho	27.15	689.6	30.11	764.8	43	6.1	83	W	4	1.8	.....	2k	5s	Calm	W	Inap	Inap.	Fair	
Boston, Massachusetts	30.27	768.8	30.42	772.7	58	14.4	64	S	3	1.3	.....	1cs	Haze	Calm	Calm	0	0	Hazy	
Brackettville, Texas	28.91	734.3	29.90	759.4	78	25.6	82	SE	5	2.2	.....	2k	5s	Calm	S	0	0	Cloudy	
Breckenridge, Minnesota	28.99	736.3	30.01	762.2	36	2.2	100	SE	10	4.5	.....	8k	0	W	.....	0.02	0.5	Cloudy	
Brownsville, Texas	29.88	758.9	29.94	760.5	80	26.7	91	SE	4	1.8	.....	5c	0	E	.....	0	0	Fair	
Buffalo, New York	29.39	746.5	30.07	763.8	61	16.1	77	S	16	7.2	.....	1k	5s	SW	SW	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.05	763.3	30.31	769.9	58	11.7	61	S	12	5.4	.....	2c	5s	W	W	0	0	Fair	
Cairo, Illinois	29.71	754.6	30.04	764.3	67	19.4	89	S	2	0.9	.....	1ck	0	S	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	48	8.9	62	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	65	18.3	18	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.25	768.3	49	9.4	51	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp o, California	27.37	695.2	29.94	760.5	40	4.4	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.22	767.6	75	23.9	86	Calm	0	0	.....	.....	10s	.....	SE	0.04	1.0	Cloudy	
Cape Henry, Virginia	30.21	767.3	30.23	767.8	68	20.0	100	E	27	12.1	.....	.....	10n	.....	NE	1.27	32.3	Heavy rain	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	75	23.9	90	NE	8	3.6	.....	.....	10s	.....	SW	1.00	25.4	Cloudy	
Cape May, New Jersey	30.27	768.8	30.30	769.6	70	21.1	75	SE	14	6.3	.....	.....	10ks	.....	SE	0	0	Cloudy	
Castroville, Texas	29.26	743.2	29.93	760.2	77	25.0	91	S	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
Charleston, South Carolina	30.15	765.8	30.21	767.3	74	23.3	95	NE	4	1.8	.....	10cs	0	W	.....	1.01	25.7	Cloudy	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	38	3.3	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.47	747.3	30.11	764.8	55	12.8	81	W	4	1.8	.....	5c	Haze	Calm	.....	0.10	2.5	Fair	
Cincinnati Ohio	29.48	748.8	30.12	765.0	66	18.9	84	S	5	2.2	.....	.....	10ks	.....	SW	0	0	Threatening	
Cleveland, Ohio	29.40	746.7	30.11	764.8	61	16.1	82	S	13	5.8	.....	.....	10s	.....	S	0.06	1.3	Cloudy	
Coleman City, Texas	28.26	717.8	29.89	759.2	66	18.9	89	S	6	2.7	.....	0	2s	.....	SW	0	0	Fair	
Columbus, Ohio	29.30	744.2	30.12	765.0	60	15.6	94	S	6	2.7	.....	.....	10s	.....	S	0.04	1.0	Cloudy	
Concho, Texas	28.13	714.5	29.74	755.4	67	19.4	79	E	4	1.8	.....	5k	0	S	.....	0	0	Fair	
Corsicana, Texas	29.60	751.8	30.06	763.5	74	23.3	95	S	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.54	750.3	30.18	766.6	50	10.0	86	Calm	0	0	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Decatur, Texas	28.88	733.5	30.02	762.5	72	22.2	80	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.28	743.7	30.06	763.5	69	20.6	90	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.67	626.6	29.89	759.2	57	13.9	81	SE	10	4.5	.....	0	Haze	.....	.....	0	0	Clear	
Des Moines, Iowa	29.25	742.9	30.13	765.3	54	12.2	61	Calm	0	0	.....	0	Haze	.....	Calm	0.15	3.8	Hazy	
Detroit, Michigan	29.41	747.0	30.06	763.5	61	16.1	88	W	6	2.7	.....	5k	5s	W	W	0.06	1.3	Cloudy	
Dodge City, Kansas	27.46	697.5	29.75	755.6	48	8.9	85	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.47	748.5	30.18	766.6	46	7.8	84	Calm	0	0	.....	.....	Fog	.....	Calm	0.03	0.8	Foggy	
Duluth, Minnesota	29.40	746.7	30.09	764.3	40	4.4	82	NW	12	5.4	.....	5cs	0	NW	.....	0.15	3.8	Fair	
Eagle Pass, Texas	29.10	741.7	29.91	759.7	74	23.3	95	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	30.33	770.4	30.40	772.1	54	12.2	61	SW	1	0.4	.....	5c	0	Calm	.....	0	0	Fair	
Edinburg, Texas	.....	.....	.....	.....	78	25.6	95	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	69	20.6	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.39	746.5	30.09	764.3	63	17.2	78	S	13	5.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Escanaba, Michigan	29.40	746.7	30.06	763.5	47	8.3	85	W	4	1.8	.....	5k	0	W	.....	0.48	12.2	Fair	
Florence, Arizona	28.39	721.1	29.99	761.7	64	17.8	34	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.56	649.2	29.62	752.3	48	8.9	49	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.27	641.8	30.23	767.8	62	16.7	52	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.51	749.5	30.03	762.7	70	21.1	80	E	6	2.7	.....	2k	0	SW	.....	0	0	Clear	
Fort Griffin, Texas	28.75	730.2	29.99	761.7	66	18.9	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.82	706.6	29.65	753.1	76	23.9	77	Calm	0	0	.....	0	5ks	.....	S	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.79	731.3	29.87	758.7	66	18.9	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.33	719.6	29.83	757.7	75	23.9	86	Calm	0	0	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	30.03	762.7	30.07	763.8	78	25.6	86	S	3	1.3	.....	5k	0	S	.....	0.01	0.3	Fair	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.49	748.3	30.10	764.5	60	15.6	65	N	12	5.4	.....	0	2s	.....	N	0.40	10.2	Fair	
Indianapolis, Indiana	29.35	745.5	30.11	764.8	65	18.3	84	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianola, Texas	30.01	762.0	30.06	763.5	81	27.2	87	S	4	1.8	.....	6c;k	0	W; Calm	.....	0	0	Fair	
Jacksboro, Texas	28.86	733.0	29.94	760.5	73	22.8	81	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.13	765.3	30.16	766.1	75	23.9	86	SE	2	0.9	.....	8k	0	SE	.....	1.44	36.6	Cloudy	
Keokuk, Iowa	29.51	749.5	30.12	765.0	54	12.2	87	N	4	1.8	.....	.....	Fog	.....	Calm	0.15	3.8	Foggy	
Key West, Florida	30.02	762.5	30.05	763.3	83	28.3	71	E	7	3.1	.....	2c;k	0	W; E	.....	0	0	Clear	
Kittyhawk, North Carolina	30.15	765.8	30.17	766.3	72	22.2	95	SW	6	2.7	.....	.....	10n	.....	SW	0.03	0.8	Light rain	
Knoxville, Tennessee	29.23	742.4	30.23	767.8	61	16.1	94	NE	1	0.4	.....	.....	10n	.....	Calm	0.21	5.3	Misting	
La Crosse, Wisconsin	29.37	746.0	30.12	765.0	45	7.2	100	S	5	2.2	.....	2k	0	Calm	.....	0.60	15.2	Clear	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	48	8.9	56	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.57	751.1	29.89	759.2	79	26.1	82	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.60	624.8	29.87	758.7	47	8.3	70	E	1	0.4	.....	.....	10s	.....	W	0	0	Cloudy	
Leavenworth, Kansas	29.26	743.2	30.12	765.0	48	8.9	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.56	750.8	29.89	759.2	59	15.0	88	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Louisville, Kentucky	29.60	751.8	30.14	765.5	66	18.9	79	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Lynchburg, Virginia	29.59	751.6	30.27	768.8	60	15.6	94	S	2	0.9	.....	.....	10n	.....	Calm	0.22	5.6	Light rain	
Marquette, Michigan	29.30	744.2	30.00	762.0	48	8.9	78	SW	8	3.6	.....	5k	0	SW	.....	0.12	3.0	Fair	
Mason, Texas	28.41	721.6	30.10	764.5	75	23.9	85	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Memphis, Tennessee	29.53	757.7	30.14	765.5	66	18.9	90	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.40	746.7	30.13	765.3	52	11.1	86	NW	9	4.0	.....	4c	Fog	Calm	.....	0.31	7.9	Fair	
Mobile, Alabama	30.13	765.3	30.17	766.3	67.5	19.7	100	NE	4	1.8	.....	.....	Fog	.....	.....	2.37	60.2	Foggy	
Montgomery, Alabama	29.95	760.7	30.18	766.6	75	23.9	76	NE	4	1.8	.....	0	5ks	.....	NE	0.48	12.2	Fair	
Morgantown, West Virginia	29.15	740.4	30.19	766.8	62	16.7	83	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	34	1.1	44	NW	23	10.3	.....	2s	Haze	Calm	Calm	0	0	Clear	
Nashville, Tennessee	29.67	753.6	30.20	767.1	65	18.3	59	SE	1	0.4	.....	.....	10s	.....	SE	0.04	1.0	Threatening	
New Haven, Connecticut	30.26	768.6	30.38	771.6	57	13.9	81	NE	3	1.3	.....	0	5s	.....	S	0	0	Fair	
New London, Connecticut	30.36	771.1	30.41	772.4	61	16.1	71	Calm	0	0	.....	0	1s;hz	.....	S;Calm	0	0	Clear	
New Orleans, Louisiana	30.06	763.5	30.12	765.0	76	24.4	91	NE	2	0.9	.....	1k	0	Calm	.....	0	0	Fair	
Newport, Rhode Island	30.35	770.9	30.40	772.1	60	15.6	65	SE	8	3.6	.....	1k	0	SE	.....	0	0	Clear	
New York, New York	30.17	766.3	30.35	770.9	65	18.3	68	SE	9	4.0	.....	8cs	0	SW	.....	0	0	Fair	
Norfolk, Virginia	30.18	766.6	30.23	767.8	68	20.0	100	E	10	4.5	.....	.....	10n	.....	Calm	0.30	7.6	Light rain	
North Platte, Nebraska	27.09	688.1	29.64	752.8	50	10.0	58	SE	24	10.7	.....	10cs	0	W	.....	0	0	Cloudy	
Olympia, Washington Ter.	30.08	764.0	30.12	765.0	43	6.1	92	S	2	0.9	.....	.....	9s	.....	S	0.43	12.2	Cloudy	
Omaha, Nebraska	28.97	735.8	30.06	763.5	46	7.8	84	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Oswego, New York	29.85	758.2	30.17	766.3	58	14.4	88	S	12	5.4	.....	.....	10n	.....	.....	0.02	0.5	Light rain	
Pembina, Dakota	29.16	740.7	30.01	762.2	30	— 1.1	100	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.25	768.3	30.30	769.6	61	16.1	82	E	6	2.7	.....	2k	8ks;s	E	E	0	0	Cloudy	
Phœnix, Arizona	28.70	729.0	.....	.....	72	22.2	34	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.85	452.2	30.06	763.5	28	— 2.2	54	SW	44	19.7	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.04	610.6	29.81	757.2	59	15.0	13	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.10	766.1	61	16.1	82	S	4	1.8	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.39	746.5	30.04	763.0	60	15.6	82	W	9	4.0	.....	5ck	0	W	.....	0.03	0.8	Fair	
Portland, Maine	30.37	771.4	30.42	772.7	52	11.1	73	Calm	0	0	.....	1ck	Haze	Calm	.....	0	0	Fair	
Portland, Oregon	30.12	765.0	30.23	767.8	47	8.3	92	S	3	1.3	.....	.....	10s	.....	Calm	1.02	25.9	Cloudy	
Prescott, Arizona	24.80	629.9	30.16	766.1	41	5.0	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.29	744.0	30.09	764.3	72	22.2	90	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.10	764.5	30.11	764.8	70	20.1	78	NE	6	2.7	.....	0	0	.....	.....	1.75	44.5	Clear	
Red Bluff, California	29.62	762.3	29.97	761.2	62	16.7	46	NW	6	2.7	.....	0	Sm'e	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.86	758.4	30.06	763.5	82	27.8	78	E	4	1.8	.....	.....	10s	.....	E	0	0	Cloudy	
Rochester, New York	29.60	749.3	30.10	764.5	62	16.7	67	SW	15	6.7	.....	1cs	0	W	.....	0	0	Clear	
Roseburg, Oregon	29.67	753.6	30.25	768.3	45.5	7.5	92	Calm	0	0	.....	0	0	.....	.....	0.03	0.8	Clear	
Sacramento, California	29.84	757.9	29.92	760.0	59	15.0	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.56	750.8	30.13	765.3	62	16.7	77	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.13	765.3	30.15	765.8	73	22.8	95	N	4	1.8	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	
St. Paul, Minnesota	29.24	742.7	30.08	764.0	41	5.0	91	Calm	0	0	.....	.....	Fog	.....	.....	0.17	4.3	Foggy	
Salt Lake City, Utah	25.45	646.4	29.78	756.4	60.5	15.8	28	S	9	4.0	.....	.....	10s	.....	W	0	0	Cloudy	
San Antonio, Texas	29.37	746.0	29.94	760.5	77	25.0	91	S	3	1.3	.....	0	5ks	.....	S	0	0	Fair	
San Diego, California	29.86	758.4	29.93	760.2	62	16.7	88	N	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.44	747.8	30.10	764.5	62	16.7	94	SW	10	4.5	.....	.....	10n	.....	SW	Inap.	Inap.	Light rain	
Sandy Hook, New Jersey	30.30	769.6	30.33	770.4	66	18.9	74	S	20	8.9	.....	8k	0	W	.....	0	0	Cloudy	
San Francisco, California	29.92	760.0	29.98	761.5	57	13.9	81	SW	4	1.8	.....	0	2s	.....	Calm	0	0	Fair	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	52	11.1	23	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.19	766.8	72	22.2	90	Calm	0	0	.....	.....	10s	.....	Calm	0.82	20.8	Cloudy	
Shreveport, Louisiana	29.89	759.2	30.10	764.5	70	21.1	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.42	620.3	.....	.....	49	9.4	47	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.19	766.8	30.22	767.6	73	22.8	95	S	7	3.1	.....	.....	10s	.....	S	2.25	57.1	Cloudy	
Springfield, Massachusetts	30.25	768.5	30.38	771.6	62	11.1	79	N	2	0.9	.....	.....	10s	.....	N	0	0	Cloudy	
Stockton, Texas	29.98	685.3	29.98	761.5	63	17.2	87	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.38	771.6	30.43	772.9	57	13.9	75	SW	8	3.6	.....	1ck	0	SW	.....	0	0	Clear	
Toledo, Ohio	29.40	746.7	30.06	763.5	64	17.8	94	S	4	1.8	.....	.....	10n	.....	S	0.12	3.0	Light rain	
Tucson, Arizona	.....	.....	.....	.....	66	18.3	41	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.15	765.8	30.18	766.6	70	24.4	95	N	5	2.2	.....	0	8ks	.....	N	0.51	13.0	Cloudy	
Umatilla, Oregon	29.68	753.9	.....	.....	49	9.4	78	W	16	7.2	.....	0	0	.....	.....	0.27	6.9	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	43	6.1	83	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.13	739.9	29.92	760.0	76	24.4	82	SE	2	0.9	.....	0	5ks	.....	S	0	0	Fair	
Vicksburg, Mississippi	29.91	759.7	30.16	766.1	71	21.7	95	SE	3	1.3	.....	Haze	0	Calm	.....	0.02	0.5	Clear	
Virginia City, Montana	24.08	611.6	29.56	750.8	38	3.3	91	Calm	0	0	.....	.....	10n	.....	Calm	0.10	2.5	Light rain	
Visalia, California	29.57	751.1	29.94	760.5	53	11.7	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.18	766.6	30.29	769.4	63	17.2	94	NE	1	0.4	.....	.....	Fog	.....	E	0.01	0.3	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	51	10.6	59	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.13	765.3	30.20	767.1	68	20.0	90	Calm	0	0	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	54	12.2	43	SW	9	4.0	.....	2k	0	SW	.....	0	0	Clear	
Wood's Holl, Mass	30.37	771.4	30.42	772.7	59	15.0	70	SE	4	1.8	.....	2ck	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.75	730.2	30.04	763.0	48	8.9	83	SE	4	1.8	.....	0	8s	.....	W	Inap.	Inap.	Cloudy	
Yuma, Arizona	29.64	752.8	29.80	756.9	66	18.9	58	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.04	763.0	30.09	764.3	31.0	— 0.6	95	W	12	5.4	.....	3k	0	W	.....	0.02	0.5	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	30.01	762.2	30.03	762.7	82	27.8	83	SE	3.6	1.6	.....	.....	10n	.....	NE	0.25	6.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.93	760.2	29.99	761.0	80	26.7	86	N	.....	.....	1	8c	2s	.....	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	79	NE	10	4.5	.....	8cs	4n	E	.....	0.02	0.5	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.09	764.3	30.10	764.5	82	27.8	87	Calm	0	0	.....	8c	2s	Calm	N	0	0	.....	James Gall.
Navassa, W. I	29.87	758.7	29.95	760.7	84	28.9	.....	NW	11.7	5.2	.....	.....	.....	.....	.....	0.38	9.7	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	83	28.3	75	E	.....	.....	2	3c	4k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.22	640.6	.....	.....	68.5	20.3	76	S	1	0.4	.....	2cs	1ks	.....	.....	0.03	0.8	.....	Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,569 (?) ft., or 874.4 (?) m.; Brackettville, 1,126 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,208 (?) ft., or 1,586.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,060 (?) ft., or 624.9 (?) m.; Fort Still, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.25	768.3	73	22.8	73	22.8	90	NE	1	0.4	.....	.....	2	.....	NW	0	0	.....	.....	Fair.....	
NavyYard,Portsmouth,N.H.	30.47‡	773.9‡	.....	.....	50	10.0	86	SSW	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.05*	763.3*	74	23.3	72	22.2	71	E	.....	.....	2	.....	7ks	.....	NW	Inap.	Inap.	.....	.....	Fair.....	
Adams. S. 45° 02′, W. 129° 01′.....	30.12	765.0	66	18.9	47	8.3	92	NNW	.....	.....	2–3	.....	.....	.....	NNW	0	0	Long	WNW	Fair.....	
Alliance, Leghorn, Italy.....	29.80‡	756.9‡	.....	.....	74	23.2	59	SW	.....	.....	1	.....	9	.....	SW	.....	.....	Light	S	Threatening	
Ashuelot. Yokohama, Japan	30.11	764.8	75	23.9	74	23.3	76	E	.....	.....	3	.....	2	.....	E	.....	.....	Smooth	.....	Clear.....	
Alaska, Talcahuano, Chili	30.23	767.8	59	15.0	49	9.4	85	SSW	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Blue sky.....	
Colorado. New York, N. Y.....	30.35‡	770.9‡	.....	.....	66	18.9	68	SSE	9	4.0	.....	.....	8	.....	W	0	0	.....	.....	Hazy.....	
Constitution, Havre, France.....	29.64‡	752.8‡	.....	.....	52	11.1	??	W	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.	
Despatch, Volo, Turkey.....	29.85‡	758.2‡	.....	.....	79	26.1	51	NW	.....	.....	1	.....	2	.....	NW	.....	.....	.....	.....	Fair.....	
Essex, S. 26° 53′, W. 40° 57′	30.00	762.0	70	21.1	70	21.1	90	ENE	.....	.....	4	.....	10	.....	E	.....	.....	Long	SE	Cloudy	
Franklin, Norfolk, Va.....	30.33	770.4	70	21.1	70	21.1	95	NE	6	2.7	.....	.....	10	.....	NE	0.3	8.	.....	.....	Cloudy.....	
Gettysburg Gibraltar.....	29.90‡	759.4‡	.....	.....	76	24.4	100	WNW	.....	.....	4	.....	2	.....	Calm	0	0	Mod'ate	NW	Clear.....	
Guard, Bahia, Brazil.....	30.15	765.8	77	25.0	75	23.9	86	SE	.....	.....	4	.....	8?	.....	SE	.....	.....	.....	.....	Clear?.....	
Hartford, Rio de Janeiro, Brazil ...	30.06	763.5	.....	.....	74	23.3	81	NNW	6.0	2.7	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	
Marion, Naples, Italy.....	29.73	755.1	73	22.8	73	22.8	59	NW	.....	.....	2	.....	10	.....	.....	Heavy	Heavy	.....	.....	Light rain...	
Michigan, Erie, Pa.....	30.01†	762.2†	.....	.....	61	16.1	82	SSW	.....	.....	5	.....	10	.....	SSW	.....	.....	.....	.....	Cloudy.....	
Monocacy. Yokohama, Japan	30.10‡	764.6‡	.....	.....	72	22.2	76	NE	.....	.....	2–4	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
New Hampshire, Port Royal, S. C.....	30.36†	771.1†	.....	.....	75	23.9	95	N	5	2.2	.....	.....	8	.....	N	1.08	27.4	.....	.....	Cloudy	
Onward, Callao, Peru.....	30.10†	764.6†	.....	.....	62	16.7	88	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.37	771.4	64	17.8	64	17.8	100	NW	.....	.....	1	.....	10	.....	W	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China.....	30.03	762.7	61	16.1	59	15.0	88	NE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Raining.....	
Plymouth. Sandy Hook, New Jersey	30.40	772.1	67	19.4	66	18.9	79	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Powhatan, New York, N. Y.....	30.36‡	771.1‡	.....	.....	65	18.3	73	ESE	4.5	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Hong-Kong, China	29.97	761.2	84	28.9	84	28.9	79	E	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo. Brownsville, Texas.....	29.99	761.7	80	26.7	80	26.7	96	SE	.....	.....	1	.....	2	.....	N	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md	30.22‡	767.6‡	.....	.....	66	18.9	89	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Saratoga, League Island, Pa	30.25*	768.3*	.....	.....	61	16.1	94	E	.....	.....	3	.....	8	.....	W	0	0	.....	.....	Hazy.....	
St. Louis, League Island, Pa	30.19	766.8	67	19.4	64	17.8	83	SE	10	4.5	.....	.....	10	.....	SE	0	0	.....	.....	Cloudy.....	
Supply, Havre, France.....	29.71	754.6	58	14.4	58	14.4	70	W	.....	.....	0–1	.....	2	.....	W	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.....	30.42‡	772.7‡	.....	.....	57	13.9	75	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Trenton, Southampton, England.	29.63‡	752.6‡	.....	.....	65	18.3	63	NNE	.....	.....	1	.....	2	.....	N	0	0	.....	.....	Clear.....	
Tuscarora, San Lorenzo Channel, Lower Cal	29.69	754.1	83	28.3	83	28.3	53	SSE	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia, Barcelona, Spain	29.66‡	753.4‡	.....	.....	67	19.4	55	WNW	.....	.....	3	.....	8	.....	NW	.....	.....	.....	.....	Fair.....	
Wabash, Boston, Mass.....	30.42‡	772.7‡	.....	.....	58	14.4	70	SE	6	2.7	.....	.....	5	.....	Calm	0	0	.....	.....	Fair.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Esquimault, B. C.		30.00*	762.0*				NW			2		0						Fair	Capt. Seabury.
S. S. City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 21° 57', W. 108° 55'		29.96†	761.0†	82	27.8	95	Calm			0		7		ESE	0	Confused	S; WNW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zelandia																			Capt. Ghost.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 39° 16', E. 157° 11'		29.98*	761.5*	68	20.0	56	SSE			3		ks		SE		Rough	NW	D. clouds	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.90†	759.4†				E			3		s			0			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 38° 06', W. 157° 55'		30.18	766.6	72	22.2	85	SW			4		0				2		Blue sky	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool		29.70*	754.4*	73	22.8	100	WNW			3		1		WNW				Cloudy	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.33	770.4	64	17.8	89	E			3		10		E	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 40° 28′ W. 70° 12′		30.42*	772.7*				ENE	12	5.4			2		SE		Smooth		Clear	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 22° 30′, W. 64° 25′		29.92	760.0	84	28.9	75	NE.	20	8.9			5k		NE	0.51 in or 13.0 mm.	Heavy sea	NE	Squally	Capt. James Jorgensen.
Schooner Florence, (N. 51° W. 50°)?		30.02*	762.5*				ENE			5	8cs	2ks		ENE				Sprinkling	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 25, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.05	763.2	68.2	20.1	77	NE	.....	.....	5	.....	0	.....	.....	0	0	Clear	Dr. Ollive.
Nemours	.....	.....	29.98	761.4	77.5	25.3	63	W	.....	.....	7	.....	0	.....	.....	0	0	Clear	Kesxuche.
Algiers	.....	.....	29.82	757.3	73.0	22.8	53	NW	.....	.....	3	.....	1	.....	.....	0.118	3.0	Very fair	Tourillere.
La Calle	.....	.....	29.78	756.5	65.7	18.7	73	W	.....	.....	7	.....	8	.....	.....	0.406	10.3	Very cloudy	Foufrede.
Tunis	.....	.....	29.71	754.6	72.0	22.2	50	NW	.....	.....	9	.....	4	.....	.....	0.024	0.6	Cloudy	Jacques.
Sfax	.....	.....	29.84	758.0	78.8	26.0	.....	N	.....	.....	5	.....	5	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	29.95	760.8	70.9	21.6	38	W	.....	.....	5	.....	3	.....	.....	0	0	Pretty fair	Herbin.
Tebessa	.....	.....	29.80	756.8	67.6	19.8	32	NNW	.....	.....	8	.....	5	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	29.94	760.4	84.0	28.9	38	N	.....	.....	9	.....	2	.....	.....	0	0	Fair	Brugnlaux.
Laghouat	.....	.....	29.98	761.5	82.8	28.2	28	SW	.....	.....	7	.....	1	.....	.....	0	0	Very fair	Bertrand.
Biskra	.....	.....	29.90	759.5	82.0	27.8	34	NW	.....	.....	7	.....	3	.....	.....	0	0	Pretty fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.04	737.6	29.57	751.0	66.6	19.2	82	NE	.....	.....	1	.....	10	.....	.....	0.339	8.6	Raining	Prof. Ivan Storir.
Cracow, I. R. Observatory	28.99	736.3	29.73	755.1	68.0	20.0	53	ESE	.....	.....	1	.....	0	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	28.89	733.9	29.74	755.4	67.6	19.8	77	Calm	.....	.....	0	.....	9s	.....	N	0	0	.....	Julius Mikolik.
Gratz	28.45	722.5	29.67	753.7	59.4	15.2	89	W	.....	.....	2	.....	10	.....	.....	0.122	3.10	.....	Andreas Rospini.
Hermannstadt	28.80	718.9	29.83	757.7	70.9	21.6	53	S	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremtmünster	28.22	716.9	29.52	749.7	63.1	17.3	77	ENE	.....	.....	5	.....	8	.....	.....	0.354	9.0	.....	Prof. C. Wagner
Lemberg	28.81	731.7	29.75	755.7	70.5	21.4	74	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.37	745.9	29.48	748.7	60.3	15.7	99	E	.....	.....	3	.....	10s	.....	.....	1.224	31.1	Thunder-storm.	I.R.Hydrographic Office
Szathmar	29.28	743.6	29.72	755.0	69.1	20.6	78	E	.....	.....	2	.....	4	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.38	746.2	29.64	752.9	74.5	23.6	55	S	.....	.....	4	.....	4	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.41	747.1	29.52	749.7	64.2	17.9	80	ENE	.....	.....	1	.....	10	.....	.....	1.898	48.2	Raining	P. Busin.
Vienna	28.96	735.6	29.65	753.2	63.9	17.7	81	ESE	.....	.....	2	.....	10	.....	.....	0	0	.....	I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna snybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.32	719.2	29.83	757.6	48.0	8.9	86	N	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.58	751.2	29.77	756.2	59.0	15.0	62	WSW	.....	.....	1	.....	3	.....	WSW	0.024	0.60	.....	Royal Observatory
Furnes	29.77	756.2	29.80	756.8	59.4	15.2	77	SW	.....	.....	3	.....	10	.....	.....	0.059	1.5	Foggy	M. E. de Cae.
Maeseyck	29.67	753.6	29.80	756.9	59.0	15.0	76	W	.....	.....	0	.....	1	.....	.....	0.071	1.8	.....	M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

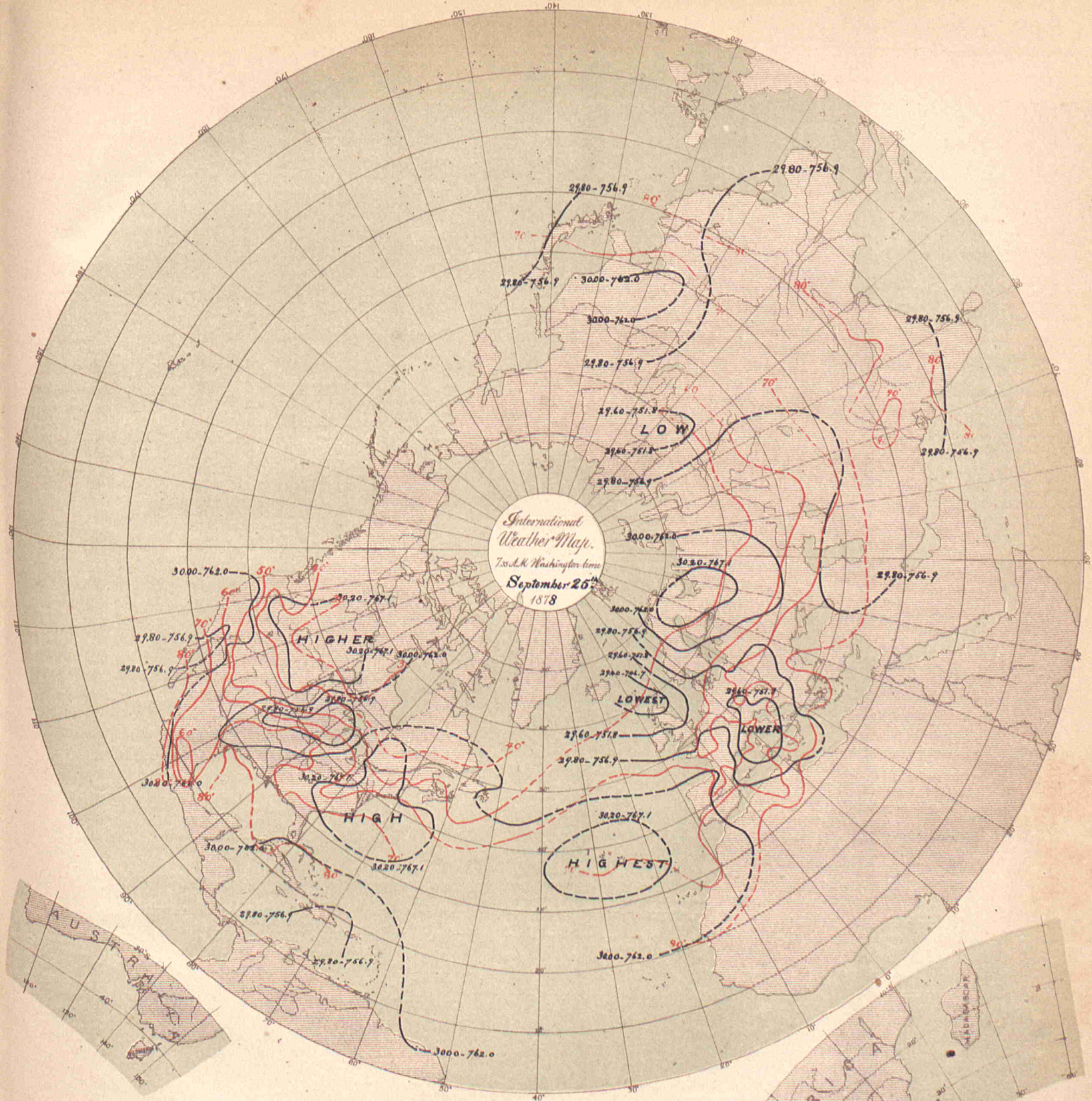
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum't'l error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.
Aberdeen	29.27	743.4	29.36	745.7	53.0	11.7		WNW	5	2.2			6			0.120	3.05	D. clouds	W. Boswell.
Ardrossan	29.45	748.0	29.47	748.5	54	12.2		NW			5		7					D. clouds	George Carrick.
Armagh, Observatory			29.60	751.8	54.6	12.6		NW	12	5.4			6					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.52	749.8	54	12.2		WNW	20	8.9			10					Raining	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.09	738.9	29.49	749.0	57.5	14.2		N			3		10			0.13	3.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	84	28.9		SE			2		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29 64	752.8	56.0	13.3		SW			2		10					Raining	H. Todd.
Cardington			29.64	752.8	58.0	14.4		SW			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.57	751.1	29.70	754.4	58.2	14.6		SW			4		9					Overcast	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.23	717.0	29.68	753.9	55.0	12.8		SW			2		10					Rain & fog	Alexander Watt.
Donaghadee	29.53	750.0	29.56	750.8	51	10.6		NNW			3		8					D. clouds	J. Mac Gowan.
Dover	29.69	754.1	29.72	754.9	60	15.6		SW			3		7					¾ clouded	J. Costello.
Eccles, (near Manchester)			29.49	749.0	56.0	13.3		S	4.0	1.8			10					Raining	Thomas Mackereth.
Falmouth, Observatory	29.49	749.0	29.71	754.6	60.9	16.1		WSW			5		10					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	78.5	25.8		Calm			0		4					Drizzling	
Galway, Queen's College			29.66	753.4	58	14.4		NW			3		5					D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.91	759.7	29.96	761.0				SW			5		0					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.25	742.9	29.46	748.3	53.7	12.1		W			4		6					D. clouds	D. G. Maclean.
Great Yarmouth	29.68	753.9	29.68	753.9	58	14.4		SSW			4		5					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.53	750 0	29.70	754.4	57.3	14.1		SW			2		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.51	749.5	29.73	755.1	58.5	14.7		SSW			2		10					Raining	Dr. S. E. Hoskins, F.R.S.
Helston			29.79	756.7	63	17.2		SW			1		10n			0.13	3.3	Misty	M. P. Moyle.
Holyhead	29.60	751.8	29.66	753.4	56	13.3		NW			5		8					D clouds	John Tilston.
Jersey	29.52	749.8	29.80	756.9	58.3	14.6		WSW			5		10			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory	29.66	753.4	29.69	754.1	56.2	13 4		SSW	19	8.5			10					Raining	The Staff.
Kingstown	29.58	751.3	29.61	752.1	56	13.3		NW			4		6					D. clouds	George Mitchell.
Leicester, Museum			29.58	751.3	54.0	12.2		SW			2		10					Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.57	751.1	29.64	752.8	83	28.3		SW			3		3c					D. clouds	Sergt. Beckett.
Nairn	29.26	743.2	29.35	745.5	55	12.8		W			1		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	83.5	28.6		E			2		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.38	746.2	29.57	751.1	53.9	12.2		S			4		10n		S	0.020	0.51	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.05	737.9	29.56	750.8	54.0	12.2		S			3		10					Rain and fog	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.64	752.8	55	12.8		SE			4		10					Raining	H.E. Bellamy.
Plymouth	29.62	752.3	29.70	754.4	59.0	15.0		SW			3		10					Overcast	John Merrifield.
Roche's Point	29.61	752.1	29.66	753.4	57	13.9		N			5		5					Cloudy	W. Kennedy.
Saint Ann's Head	29.44	747.8	29.60	751.8	59	15.0		W			5		10					Misty	John C. Walker.
Sandwick Manse, (Orkneys.)			29.32	744.7	53.5	11.9		SW	5	2.2			4			1.18	30.0	D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.81	757.9	79.7	26.5		SW			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.27	743.4	29.54	750.3	57.0	13.9		SSW			3		10			0.11	2.8	Overcast	W. F. Cooper.
Silloth, Rectory	29.44	747.8	29.47	748.5	60.0	15.6	71	SW			2		4			0.050	1.27	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.10	739.1	29.50	749.3	54.1	12.8		WNW			3		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.48	748.8	29.69	754.1	55.4	13.0		S			1		10					Raining	Rev. C. H. Griffith, F.M.S
Thurso			29.30	744.2	56	13.3		WSW			3		7					D. clouds	John Trotter.
Truro, Royal Institution			29.76	755.9	58	14.4		W			6		8					Gloomy	W. Newcombe.
Valencia, Observatory	29.71	754.6	29.74	755.4	57.5	14.2		NNW	20	8.9			3					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.12	739.6	45.0	7.2	88	SE			2		10kn			0.01	0.8	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.13	765.3	73.4	23.0	62	ESE	16.0	7.2		2	4		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.46	748.3	29.55	750.6	49.7	9.8	80	NW	8	3.6			5			0.08	2.0	Raining	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Bar. corr. Inches	Millimeters	Bar. red. Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0–9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20′, W. 39° 30′			30.20	767.1	83	28.3		Calm			0		6	SSE		3	WNW	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 21° 20′, W. 40° 40′			30.00	762.0	87	30.6		Calm			0		3				N	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 42° 30′, W 44° 35′			30.03	762.7	64	17.8		WSW			6		6			5		Showery	Capt. Alex Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.22	666.0			66.6	19.2	92	SE			1	2c	7s			0.32	8.1		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.73	755.1	29.78	756.8	60.8	16.0	84	ESE			4		7						
Fanöe	29.69	754.0	29.71	754.5	58.5	14.7	83	SE			2		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.21	742.0	29.25	742.9	50.7	10.4	72	SW			4		3						
Vestervig	29.02	752.4	29.70	756.7	56.8	13.8	85	E			2		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.36	745.7	29.91	759.7	66.1	18.4	86	SW			8		10			0.165	4.2	Covered	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.60	751.9	29.68	753.9	63.5	17.5	89	N			4		2					Partly cl'dy	M. Giraud, Director.
Bar-sur-Seine	29.26	743.3	29.81	757.2	58.8	14.9	52	N			2		8n		NE	0	0	Cloudy	C. Saillard.
Beaumette Obs y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.56	750.7	29.84	757.8	56.7	13.7	71	W			1		10		N	0.006	0.15	Covered	Frere Eugene Marie, Director.
Besançon	28.92	734.6	29.82	757.4	52.0	11.1	74	ENE			2		10		W	0	0	Covered	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.26	743.3	29.82	757.3	54.5	12.5	76	SW			1		2k		SW	0	0	Slightly cov	A. Wagner, Director.
Brest, Naval Observatory	29.57	751.0	29.82	757.1	62.6	17.0	87	NNW			2		10		NNW	0.079	2.00	Misty	The Staff.
Carcassonne, Normal School	29.38	746.2	29.78	756.4	64.4	18	42	NW			6		5	W	NW	0	0	Cloudy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.28	743.8	29.84	757.8	63.0	17.2	75	SW			2		10	NE	NE	0.12	3.	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.48	748.9	29.80	756.9	61.2	16.2	61	NW			1		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.52	724.4	29.85	758.2	60.8	16.0	47	NW			1		8		N	0.031	0.8	Very cloudy	Allnard, Director.
Commercy, Normal School	28.95	735.4	29.88	757.6	54.3	12.4	72	W			1		8kn		W	0	0	Cloudy	Dr. Coulet, Director.
Commune de Grèasque*	28.45	722.6	29.59	751.6	59.2	15.1	48	N			4		8	NE	SE	0	0	¾ covered	W. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. Schoo																			Monillot, Director.
Le Mans, Normal School	29.59	751.5	29.89	759.2	58.1	14.5	53	WSW			1		8		NW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.90	734.1	29.81	757.2	55.4	13	66	NE			4		5		NE	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	29.82	757.5	29.85	758.3	57.4	14.1	67	NW			4		10			0.16	4.	Covered	M. Galzin, Director
Mirecourt, Normal School	28.76	730.4	29.80	757.0	48.7	9.3	95	N			1		10n		N			Raining	M. Barbier, Director.
Nismes, Normal School	29.48	748.7	29.60	754.9	68.4	20.2	53	N			6			N		0	0		Boyer, Director.
Privas, Normal School	28.72	729.5	29.78	756.5	54.7	12.6	52	W			3		n	W	W	0	0		M. Cantier.
Puy de Dome (Summit)	24.98	634.4			35.6	2.0	100	NW			2					0.142	3.6	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	29.91	759.6	29.94	760.4	61.9	16.6	83	NW			1		10	SSW	SW	0.08	2.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.73	755.2	29.82	757.4	59.0	15.5	55	S			1		10	NW	SW	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			29.82	757.4	57.7	14.3	86	S			3		8		SSW	0.038	1.48	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.67	753.7	29.84	757.9	57.7	14.3	64	W			1		9			0	0		E. Renou.
Tarbes, Normal School	29.91	734.2	29.97	761.1	60.8	16	79	W			4		5	SW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director
SUB-STATIONS.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	80.6	27										0	0		L'Abbé Marchés.
Lyons			29.83	757.7	56.7	13.7	52						9			0	0		L. Jays.
Marseilles, Observatory			29.55	750.5	62.8	17.1	37	NW			6-8		8			0	0	Very cloudy	The Staff.
Mont-Louis	24.85	631.2	30.17	766.2	54.7	12.6	56	NW			3		5		SE	0.492	12.5		M. Cave.
Nice			29.47	748.4	63.5	17.5	75	NE			1		2			1.043	26.5		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.56	750.8	29.84	757.8	57.4	14.1	65	W			1		9		NW	0	0		Marié Davy, Director
Perpignan			29.80	756.8	68.2	20.1	48	NW	33.5	15.00			2		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.43	569.7			31.8	— 0.1		NW			2		10			1.576	40.0	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.24	742.8	29.97	761.1	60.4	15.8	49	NW			4		6			0.094	2.40		The Staff.
Tours	29.69	754.0	29.88	759.0	59.2	15.1	61	WNW			1		7		N	0	0		C. Marquet.
Versailles			29.85	758.2	59.0	15.0	48	NW			1		10			0.008	0.21	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	759.0	29.91	759.6	77.9	25.5	95	SSE	12.1	5.4			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.74	730.1	29.58	751.2	59.4	15.2	96	W			3		10			0.04	1.	Raining	Prof. Dr. Hoh.
Berlin	29.55	750.5	29.71	754.7	67.1	19.5	66	SE			1		8			0	0		Prof. Arndt.
Breslau	29.21	741.9	29.73	755.2	72.5	22.5	45	E			3		3			0	0		Royal University Obs'y
Carlsruhe	29.26	743.1	29.68	753.8	54.0	12.2	96	NW			2		10			0.354	9.0	Raining	Albert Senz.
Cassel	29.10	739.0	29.70	754.3	55.0	12.8	94	N			4		10	N		0.162	4.12		Dr. H. Möhl.
Crefeld	29.58	751.4	29.74	755.5	61.3	16.3	65	N			3		7k			0	0		Director Lose.
Emden	29.76	755.9	29.80	756.8	60.8	16.0	74	N			2		5			0	0		Prof. Prestel.
Frankfort on the Main	29.33	745.0	29.69	754.2	56.3	13.5		N			2		10			0.193	4.9	Raining	Physical Society.
Friedrichshafen	28.27	718.0	29.69	754.0	53.8	12.1	84	NW			5		10	NW		0.724	18.4		M. Wilhelm.
Hamburg	29.67	753.6	29.74	755.4	61.0	16.1	83	NE			1		10			0.004	0.1	Foggy	Captain F. Hegemann.
Kiel	29.71	754.5	29.72	754.9	58.8	14.9	94	NE			1		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.73	755.2	29.81	757.2	70.7	21.5	72	NE			3		2			0.004	0.1		Prof. E. Luther.
Köslin			29.72	755.0	70.0	21.1		SE			2		2			0	0		H. Müller.
Leipsic, Observatory	29.27	743.4	29.68	753.8	63.1	17.3	71	NE			1		9			0.004	0.1		Prof. Bruhns.
Memel, Naval School	29.83	757.6	29.87	758.8	70.3	21.3	70	Calm			0		1cs					Clear	Reinbrecht and Skalweit.
Neufahrwasser	29.82	757.4	29.84	757.8	64.0	17.8	84	NE			3		1			0	0		A. Lothes.
Posen	29.50	749.4	29.78	756.5	70.0	21.1	54	S			5		2			0	0		Dr. Magener.
Strassburg (in Alsace)	29.20	741.7	29.75	755.6	52.5	11.4	96	NW			1		10			0.272	6.90	Raining	Astronomical Observatory.
Stuttgart	28.71	729.2	29.64	752.8	53.2	11.8	91	W			1		10			0.185	4.7	Raining	Prof. Schoder.
Treves, (Trier)	29.20	741.6	29.71	754.7	56.8	13.8	72	NW			0–1		10			0.001	0.02	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.16	715.2	29.63	752.7	54.5	12.5	95	NE	1.6	0.7			10		NE	0.201	5.1		Dr. Von Bebber.
Wustrow, Naval School	29.74	755.4	29.78	756.4	62.4	16.9	81	ENE			2		7			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.47	748.6	29.85	758.2	82.0	27.8		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.71	754.6	29.76	755.9	84.9	29.4	68	WSW	17?	7.6?			1			0	0	Misty	
Deesa	29.32	744.7	29.79	756.6	87.4	30.8	62	SSE					0			0	0	Blue sky	
Bombay	29.75	755.7	29.79	756.7	82.4	28.0	83	WSW	8	3.6			4	S	SW	0.04	1.0	D. clouds	
Poona	27.76	705.0	29.76	755.8	77.0	25.0	78	WSW					10		WSW	0	0	D. clouds	
Lahore	28.94	734.9	29.66	755.9	91.1	32.8	33	NW	0.9	0.4			2			0	0	Blue sky	
Belgaum	27.28	693.0	29.83	757.6	73.9	23.3	88	W	3	1.3			6	ENE	W	0.06	1.5	D. clouds	
Roorkee	28.77	730.7	29.65	753.2	85.8	29.9	56	NW	2	0.9			0			0	0		
Agra	29.13	740.0	29.68	753.9	91.7	33.2	64	W								0	0		
Nagpur	28.70	729.0	29.73	755.2	83.1	28.4	77	N	2.3	1.0			10		W	1.39	35.3	Overcast	
Lucknow																			
Allahabad	29.37	745.9	29.68	753.7	84.1	28.9	79	Calm	2.2	1.0			3			0	0	D. clouds	
Patna	29.52	749.7	29.70	754.3	80.5	26.9	90	W	1.1	0.5			10	W	W	0.14	3.6	Overcast	
Hazaribagh	27.70	703.5	29.70	754.3	78.8	26.0	79	NW	5.9	2.6			4	E	NW	0	0		
Cuttack	29.64	752.8	29.72	754.9	82.0	27.8	83	NNE	0.6	0.3			4			0.09	2.3	Thunder-storm	
Calcutta (Alipore)	29.68	754.0	29.71	754.6	80.6	27.0	90	E	4	1.8			4			0	0	D. clouds	
Goalpara	29.34	745.2	29.73	755.0	80.9	27.2	87	Calm	5.5	2.5			6			0.01	0.3	D. clouds	
Chittagong	29.67	753.6	29.76	756.6	83.3	28.5	94	Calm	2.2	1.0			10			0	0	Overcast	
Sibsagar	29.37	746.0	29.70	754.5	79.2	26.2	86	ENE	2.4	1.1			10	W	W	0.58	14.7	D. clouds	
Jubbulpore	28.38	721.0	29.73	755.2	84.8	29.3	70	NE	1.7	0.8			1			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.17	741.0	29.58	751.2	61.3	16.3	86	N	1.3	0.6	.....	.....	10	.....	.....	4.086	103.8	.....	Prof. Giovanni Clodig.
Padua	29.45	748.1	29.56	750.8	61.5	16.4	91	E	8.7	3.9	.....	.....	10	NNE	.....	1.102	28.0	.....	Prof. Dott. Lorenzoni
Vicenza	29.38	746.3	29.57	751.1	61.9	16.6	92·	E	3.1	1.4	.....	.....	10	E	.....	2.020	51.3	.....	Cont· Alm. Da Schio.
Bergamo	28.26	717.8	29.55	750.5	57.9	14.4	82	SW	.....	.....	2	.....	10	.....	.....	1.220	31.0	.....	Prof. Trionfini Carlo.
Milan	29.04	737.5	29.54	750.3	63.1	17.3	73	W	.....	.....	2	.....	9	SE	.....	0.240	6.1	.....	Prof. Schiaparelli.
Moncalieri	28.68	728.5	29.57	751.0	59.2	15.1	70	WSW	1.3	0.6	.....	.....	9	NE	.....	0.512	13.0	.....	Prof. P. F. Denza.
Mondovi	29.72	704.1	29.60	751.7	62.0	11.1	93	W	.....	.....	2	.....	10	.....	.....	0.636	16.2	.....	Prof. D. C. Bruno.
Porto Maurizio	29.32	744.7	29.54	750.2	63.7	17.6	67	NE	.....	.....	4	.....	8	NE	.....	0.394	10.0	.....	Prof. L. Vassallo.
Genoa	29.37	746.0	29.54	750.2	65.1	18.4	57	N	.....	.....	2	.....	8	S	.....	0.709	18.0	.....	Prof. G. M. Garibaldi.
Parma	29.25	743.0	29.56	760.8	58.8	14.9	86	WNW	.....	.....	4	.....	10	.....	.....	1.319	33.5	.....	Prof. P. Pigorini.
Florence	29.29	744.0	29.54	750.3	67.6	19.8	73	W	.....	.....	2	.....	10	SW	.....	1.362	34.6	.....	Cav. F. Meucci
Leghorn	29.42	747.2	29.50	749.4	67.5	19.7	66	ENE	1.8	0.8	.....	.....	4	W	.....	1.213	30.8	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.00	711.3	29.53	750.0	60.6	15.9	74	SW	.....	.....	1	.....	10	.....	.....	1.724	43.8	.....	Prof. P. Serpieri
Rome	29.39	746.4	29.56	750.8	71.1	21.7	54	SW	9.4	4.2	.....	.....	6	.....	.....	1.150	29.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.41	746.9	29.60	751.8	70.3	21.3	64	SSE	.....	.....	6	.....	9	SSW	.....	0.433	11.0	.....	Prof. L. Palmieri.
Lecce	29.43	747.4	29.67	753.7	76.5	24.7	78	S	28.0	12.5	.....	.....	9	S	.....	1.091	27.7	.....	Prof. C. De Giorgi
Cagliari	29.37	746.0	29.56	750.8	68.0	17.2	70	N	.....	.....	2	.....	9	NW	.....	0.370	9.4	.....	Prof. A. Pacinotti.
Cosenza	28.77	730.5	29.68	753.8	68.7	20.4	80	NW	3.1	1.4	.....	.....	10	.....	.....	1.780	45.2	.....	Prof. F. D. Conti.
Palermo	29.38	746.3	29.63	752.6	73.8	23.2	48	WSW	4.9	2.2	.....	.....	10	.....	.....	0.161	4.1	.....	Prof. G. Cacciatore.
Syracuse	29.53	750.0	29.60	751.8	80.6	27.0	62	SE	11.2	5.0	.....	.....	9	SW	.....	0.138	3.5	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R	29.06	738.1	29.61	752.2	66.6	19.2	77	WSW	6.9	3.1	.....	.....	8	W	.....	0.532	13.5	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.77	756.1	29.97	761.2	75.2	24.0	87	SW	0.8	0.4	.....	.....	10s	.....	SW	0.034	0.86	Cloudy	
Tokei (Yeddo) Observatory	29.71	754.6	29.78	756.4	66.6	19.2	80	SSW	2.5	1.1	.....	.....	3s	.....	.....	0	0	Fair	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.0	17.2	70	N	.....	.....	2	3cs	0	E	.....	0	0	Fair	P. Ceballos.
Guadalajara	25.08	637.1	30.03	762.8	59.9	15.5	77	Calm	.....	.....	0	0	8k	.....	E	0.024	0.6	Misty	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.46	621.3	30.00	762.0	62.6	17.0	82	NW	.....	.....	1	6c	4k	NW	Calm	0.086	2.18	Very cloudy	Prof. M. Leal.
Mexico	23.14	587.9	30.14	765.6	56.3	13.5	90	Calm	0	0	.....	0	10km	.....	NE	0.04	1.0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.0	15.0	86	Calm	.....	.....	0	1c	0	.....	.....	0	0	Clear	M. Y. de Leon, M. E.
Puebla	23.37	593.7	30.09	763.6	51.8	10.7	91	NE	2.9	1.3	.....	0	3cs	.....	Calm	0	0	Clear	Prof. B. Gonzalez.
Tlacotalpam	29.96	706.9	29.97	761.2	77.4	25.2	94	NE	.....	.....	4	0	10n	.....	E	0.236	6.	Rainy	M, M. Cházaro.
San Luis Potosi	24.33	618.3	30.19	766.7	61.0	16.1	32	E	3.1	0.4	.....	.....	10	.....	E	0.004	0.1	Covered	G. Barroeta, M. D.
Zacatecas	30.01	762.4	30.04	763.1	78.8	26.0	79	SE	.....	.....	.....	0	8km	.....	.....	0.433	11.0	Rainy	Prof. J. Rossell.
Puebla, (Catholic Institute)	.....	.....	.....	.....	55.4	13.0	83	NE	.....	.....	1	0	5	.....	NE	0	0	⅗ cloudy	J. A. Bonilla, M. E.
Durango	23.36	593.4	30.12	765.1	50.0	10.0	85	N	1.8	0.8	.....	1	0	Calm	.....	0	0	Clear	Prof. P. Spina, [M.M. D. D
Colima	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
San Juan E. Michapam	28.37	720.5	29.99	761.8	78.1	25.6	83	Calm	0	0	.....	0	2	.....	.....	0.677	17.2	Clear	R. Banda, C. E.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.79	756.6	29.79	756.6	60.8	16.0	.....	SSW	.....	.....	3	.....	.....	.....	.....	0.008	0.2	.....	
Groningen	29.71	754.5	29.76	755.9	58.1	14.5	.....	W	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	29.73	755.2	29.78	755.2	59.4	15.2	.....	S	.....	.....	2	.....	.....	.....	.....	0.039	1.0	.....	
Hellevoetsluis	29.78	756.4	29.78	756.4	63.0	17.2	67	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.73	755.1	29.78	756.3	61.7	16.5	64	SW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.64	752.8	29.69	754.2	59.7	15.4	55	SSE	12.3	5.5	.....	.....	5	.....	.....	0.134	3.4	.....	
Brönö	29.92	760.0	29.96	761.0	56.1	13.4	52	SSE	27	12	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.75	755.7	29.90	759.4	52.9	11.6	88	NE	0	0	.....	.....	10	.....	.....	0.035	0.9	.....	
Tromsö	30.13	765.2	30.17	766.3	49.3	9.6	59	SSW	7	3	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.10	764.5	30.29	769.3	68.4	20.2	75	ENE	3.8	1.7	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.66	738.1	30.06	763.4	75.0	23.9	28	ENE	6.3	2.8	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.2	30.13	765.4	75.4	24 1	56	SW	6.3	2.8	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.76	755.8	30.11	764.8	69.8	21.0	39	N	14.3	6.4	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.25	768.4	30.32	770.2	72.7	22.6	63	NE	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.90	759.5	79.7	26.5	...	.....	W	.....	.....	2	.....	3	.....	W	1	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 12° 41′, E. 12° 57′	.....	.....	29.98	761.5	74.7	23.7	.....	SW	.....	.....	5	.....	10	.....	NW	4	SW	Overcast	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.94	760.4	86.0	30.0	.....	NE	.....	.....	4	.....	8	.....	NE	3	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.76	756.0	85.1	29.5	.....	ESE	.....	.....	2	.....	5	.....	ESE	0	.....	D. clouds	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.37	746.1	29.78	756.4	70.9	21.6	64	SSE	11	5	.....	.....	1k	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.54	750.3	29.95	760.6	70.2	21.2	57	SSE	4	2	.....	.....	6	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.80	756.8	30.04	762.9	58.3	14.6	80	ESE	7	3	.....	.....	9k;ks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.15	765.8	30.17	766.2	54.0	12.2	78	E	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.24	742.7	29.84	758.0	73.4	23.0	56	E	4	2	.....	.....	5k;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.80	756.8	29.87	758.6	81.0	27.2	51	S	4	2	.....	.....	3k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.87	758.6	29.89	759.1	77.7	25.4	64	N	2	1	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.63	752.7	30.18	766.6	56.5	13.6	58	SW	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.78	756.4	29.98	761.4	76.3	25.7	28	ENE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.22	767.6	30.24	768.1	45.3	7.4	85	NW	4	2	.....	.....	9k	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.41	721.7	29.77	756.2	73.8	23.2	50	N	4	2	.....	.....	4c	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.92	760.0	29.84	757.9	70.5	21.4	53	ENE	4	2	.....	.....	8s;n	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Krotkowo*	29.58	751.2	30.04	763.0	61.2	16.2	49	NNE	9	4	.....	.....	1s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.82	757.5	30.09	764.3	57.6	14.2	55	N	2	1	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.98	736.1	29.93	760.1	50.0	10.0	57	NW	13	6	.....	.....	3c;ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.58	751.4	29.81	757.1	73.6	23.1	46	NNW	4	2	.....	.....	4cs	.....	.....	.....	.....	.....	
Tashkend	28.28	718.2	29.94	760.4	66.9	19.4	75	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.34	745.1	29.84	758.0	59.5	15.3	59	SW	4	2	.....	.....	9	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.29	744.0	29.58	751.3	46.4	8.0	86	WSW	9	4	.....	.....	5	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.90	759.4	30.04	763.0	61.3	16.3	98	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.64	752.9	29.75	755.6	69.8	21	29	WSW	3.3	1.47	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.98	761.5	30.04	762.9	60.1	15.6	96	NW	5.1	2.26	.....	.....	10	.....	.....	0.918	23.2	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.09	688.1	.....	.....	63.3	17.4	74	NW	7.1	3.17	.....	.....	9	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.80	706.1	29.95	760.7	73.4	23.0	36	S	4.5	2.00	.....	2	1	.....	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	29.79	756.7	29.94	760.4	78.8	26.0	37	SSE	5.0	2.25	.....	1	.....	SW	.....	0	0	Light clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.20	741.7	30.09	764.3	62.6	17.0	83	WNW	2.2	1.00	.....	.....	9	.....	.....	0.012	0.3	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.91	759.8	29.98	761.5	80.1	26.7	84	ENE	1.8	0.8	.....	0	1s;sk	.....	.....	0.024	0.6	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.5	30.04	762.9	73.2	22.9	44	W	13.8	6.2	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.78	756.4	29.87	758.7	82.0	27.8	89	SE	10.8	4.85	.....	3s	3k	E	E	0.827	21.00	D. clouds	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.22	767.6	30.26	768.6	51.1	10.6	.....	E	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	30.12	765.1	30.17	766.4	51.8	11.0	77	E	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	30.05	763.2	30.10	764.5	52.2	11.2	85	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	
Stockholm	29.76	755.9	29.94	760.4	54.0	12.2	98	NE	.....	.....	2	.....	10	.....	.....	0.146	3.7	.....	
Wisby	29.84	757.8	29.89	759.3	63.0	17.2	72	SE	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.87	758.8	29.95	760.7	52.9	11.6	96	ENE	6.0	2.7	.....	.....	10	.....	ENE	0.039	1.00	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.31	719.0	29.74	755.3	52.5	11.4	69	NNW	.....	.....	2	.....	10	.....	.....	0.386	9.8	Covered	The Observatory.
Zurich	28.12	714.3	29.78	756.4	48.9	9.4	94	W	.....	.....	2	.....	10	.....	.....	0.642	16.3	Covered	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.7 mm.; Thermometer, —5.2 cent.; Relative Humidity, +3 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.89	759.2	75.4	24.1	58	SE	7.	3.0	.....	3	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	29.81	757.2	75.7	24.3	.....	SW	.....	.....	2	5	.....	.....	2.44	62.	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.76	755.9	29.88	758.9	84.6	29.2	52	WNW	.....	.....	2	.....	7s	.....	E	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.93	760.2	30.24	768.1	50	10.0	.....	Calm	0	0	.....	2c	0	W	.....	0.19	4.8	Fair	W. R. Bigg.
*Chatham, N B	30.01	762.2	30.07	763.8	53	11.7	93	SW	1	0.4	.....	2k	0	W	.....	0.01	0.3	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.04	763.0	30.08	764.0	55	12.8	93	W	6	2.7	.....	.....	10n	.....	Calm	0.200	0.51	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.23	767.8	48.4	9.1	86	NW	.....	.....	1	0cs	0	.....	.....	0.098	2.49	Fair	James Smith, M. A.
Dalhousie, N. B	29.96	759.4	30.06	763.5	52.5	11.4	93	W	.....	.....	1	.....	.....	.....	.....	0.06	1.5	Cloudy	H. A. Johnson.
Esquimault, B. C	29.98	761.5	30.03	762.7	47.3	8.5	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.30	7.6	Overcast	W. H. Bevis.
*Father Point, Quebec	30.03	762.7	30.06	763.5	50	10.0	86	W	30	13.4	.....	0	5ks	.....	W	0.07	1.8	Clearing	J. McWilliams.
Fredericton, N. B	30.07	763.8	30.13	765.3	57.0	13.9	87	NW	5	2.2	.....	.....	9s	.....	W	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.39	746.5	30.27	768.8	26	— 3.3	96	N	8	3.6	.....	0	5s	.....	N	0	0	Fair	James Stewart.
Granton, Ontario	29.05	737.9	30.15	765.8	50	10.0	93	E	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.99	761.7	30.13	765.3	54	12.2	95	W	7	3.1	.....	.....	10n	.....	.....	0.017	0.43	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.24	768.1	51.5	10.8	86	SW	.....	.....	1	8cs	0	SW	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.92	760.0	29.94	760.5	46	7.8	80	N	.....	.....	5	.....	10	.....	.....	0.36	9.1	Overcast	E. Weedon.
*Kingston, Ontario	29.92	760.0	30.26	768.6	48	8.9	85	N	3	1.3	.....	5c	0	Calm	.....	0.07	1.8	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.06	763.5	30.09	764.3	50.1	10.1	84	SW	8	3.6	.....	.....	10n	.....	.....	.....	.....	Raining	C. H. Rigby.
*Montreal, Quebec	30.03	762.7	30.23	767.8	51	10.6	75	W	9	4.0	.....	8cs	0	NW	.....	0.14	3.6	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.49	749.0	30.20	767.1	44	6.7	84	E	9	4.0	.....	5k	5ks	W	W	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.51	749.5	30.27	768.8	47.7	8.7	100	S	.....	.....	1	6ck	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.51	749.5	30.20	767.1	50	10.0	93	NE	7	3.1	.....	10ck	0	NW	.....	0.04	1.0	Fair	H. Morgan.
Port Hastings, N. S	30.05	763.3	30.10	764.5	50.5	10.3	.....	NW	3	1.3	.....	.....	.....	.....	.....	0.15	3.8	Raining	Peter Grant.
Port Stanley, Ontario	29.51	749.5	30.15	765.8	58	14.4	81	E	10	4.5	.....	.....	10ks	.....	SW	Inap.	Inap.	Cloudy	M. Payne.
*Quebec, Quebec	29.83	757.7	30.15	765.8	49	9.4	85	W	.....	.....	.....	2k	5ks	W	W	0.16	4.1	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.82	757.4	30.28	769.1	44	6.7	84	W	2	0.9	.....	Haze	0	.....	.....	0	0	Fair	W. H. McIntyre.
St. Andrews, N. B	30.09	764.3	30.14	765.5	58	14.4	87	NW	2	0.9	.....	2k	2ks	NW	.....	0.07	1.8	Fair	Dr. Gove.
St. John, N. B	29.97	761.2	30.14	765.5	55	12.8	100	SW	10	4.5	.....	.....	9ks	.....	.....	0.145	3.69	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.41	747.0	30.13	765 3	50	10.0	81	SE	8	3.6	.....	.....	10ks	.....	.....	.....	.....	Light rain	K. Stewart.
Stayner, Ontario	29.41	747.0	30.20	767.1	48	8.9	92	SE	4	1.8	.....	.....	10n	.....	W	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	29.90	734.0	30.19	766.8	48.1	8.9	92	SE	10	4.5	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	30.07	763.8	30.19	764.5	47	8.3	94	SW	5	2.2	.....	.....	10n	.....	.....	0.01	0.3	Heavy rain	T. C. Hill.
*Toronto, Ontario	29.85	758.2	30.24	768.1	51	10.6	86	NE	6	2.7	.....	5ck	5ks	W	SE	Inap	Inap.	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	92	S	.....	.....	.....	5ks	5sn	.....	.....	0.07	1.8	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.98	761.5	30.21	767.3	58	14.4	85	NW	4	1.8	.....	1c	0	W	.....	Inap.	Inap.	Clear	
Alpena, Michigan	29.40	746.7	30.04	763.0	55	12.8	87	SE	25	11.2	.....	.....	10n	.....	Calm	0.23	5.8	Light rain	
Atlantic City, New Jersey	30.20	767.1	30.22	767.6	68	20.0	90	NW	7	3.1	.....	5k	0	NW	.....	0.03	0.8	Fair	
Augusta, Georgia	30.03	762.7	30.21	767.3	70	21.1	90	NE	1	0.4	.....	.....	10s	.....	E	0.43	10.9	Cloudy	
Baltimore, Maryland	30.19	766.8	30.24	768.1	66	18.9	89	S	3	1.3	.....	.....	10s;fg	.....	Calm	0.01	0.3	Threatening	
Barnegat, New Jersey	30.20	767.1	30.22	767.6	68	20.0	84	NW	3	1.3	.....	2ck	Haze	W	Calm	0.01	0.3	Clear	
Bismarck, Dakota	28.46	722.9	30.32	770.1	39	3.9	82	N	6	2.7	.....	2cs	8s	Calm	N	0.05	1.3	Cloudy	
Boerne, Texas	28.57	725.7	.....	.....	77	25.0	82	SE	6	2.7	.....	8k	0	SE	.....	0	0	Cloudy	
Boise City, Idaho	27.36	694.9	30.32	770.1	37	2.8	89	N	1	0.4	.....	5c	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	30.05	763.3	30.20	767.1	64.5	18.1	87	NW	7	3.1	.....	1c	Haze	W	NW	Inap.	Inap.	Hazy	
Brackettville, Texas	28.84	732.5	29.83	757.7	76	24.4	88	S	6	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.96	735.6	29.96	761.0	43	6.1	100	N	23	10.3	.....	.....	10s	.....	N	0.14	3.6	Cloudy	
Brownsville, Texas	29.94	760.5	30.01	762.2	79	26.1	90	SE	4	1.8	.....	1k	0	Calm	.....	0	0	Clear	
Buffalo, New York	29.51	749.5	30.21	767.3	52	11.1	86	NE	7	3.1	.....	2ck	0	W	.....	Inap.	Inap.	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.00	762.0	30.26	768.6	55	12.8	68	N	1	0.4	.....	5c	0	Calm	.....	0.08	2.0	Fair	
Cairo, Illinois	29.62	752.3	30.00	762.0	71	21.7	80	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	47	8.3	48	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	61	16.1	26	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.24	768.1	48	8.9	56	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.37	695.2	29.94	760.5	39	3.9	56	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.22	767.6	74	23.3	95	Calm	0	0	.....	5k	0	W	.....	0	0	Fair	
Cape Henry, Virginia	30.19	766.8	30.22	767.6	70	21.1	90	NE	10	4.5	.....	.....	10s	.....	SE	0.10	4.8	Cloudy	
Cape Lookout, N. Carolina	30.19	766.8	30.21	767.3	72	22.2	100	NW	12	5.4	.....	.....	10n	.....	Calm	0.98	24.9	Light rain	
Cape May, New Jersey	30.21	767.3	30.24	768.1	69	20.6	85	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Castroville, Texas	29.20	741.7	29.88	758.9	77	25.0	82	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.17	766.3	30.24	768.1	73	22.8	100	NE	5	2.2	.....	.....	Fog	.....	NE	0.07	1.8	Foggy	
Cheyenne, Wyoming	24.21	614.9	30.15	765.8	32	0.0	89	N	20	8.9	.....	0	2s	.....	N	0	0	Clear	
Chicago, Illinois	29.12	739.6	29.78	756.4	67	19.4	89	SW	15	5.8	.....	5c	0	Calm	.....	0.12	3.0	Fair	
Cincinnati, Ohio	29.44	747.8	30.07	763.6	64	17.8	83	SE	4	1.8	.....	0	Fog	.....	Calm	Inap.	Inap.	Clear	
Cleveland, Ohio	29.43	747.5	30.14	765.5	57	13.9	94	SE	12	5.4	.....	.....	10s;fg	.....	Calm	0.03	0.8	Cloudy	
Coleman City, Texas	28.16	715.3	29.76	755.9	71	21.7	85	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Columbus, Ohio	29.27	743.4	30.09	764.3	60	15.6	88	SE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	28.02	711.7	29.61	752.1	74	23.3	81	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.53	750.0	29.98	761.5	74	23.3	90	S	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Davenport, Iowa	29.12	739.6	29.72	754.9	69	20.6	85	SW	17	7.6	.....	.....	10ks	.....	SW	0.15	3.8	Cloudy	
Decatur, Texas	28.80	731.5	29.92	760 0	74	23.3	86	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.15	740.4	29.91	759.7	75	23.9	86	SW	11	4.9	.....	2k	0	SW	.....	0	0	Fair	
Denver, Colorado	25.03	635.8	30.25	768.3	43	6.1	67	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Des Moines, Iowa	28.87	733.3	29.70	754.4	66	18.9	84	NW	7	3.1	.....	0	8ks	.....	NW	0.33	8.4	Cloudy	
Detroit, Michigan	29.40	746.7	30.05	763.3	62	16.7	72	SE	8	3.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Dodge City, Kansas	27.46	697.5	29.73	755.1	52	11.1	60	N	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.03	737.3	29.69	754.1	63	17.2	83	SW	7	3.1	.....	.....	10n	.....	SW	1.04	26.4	Light rain	
Duluth, Minnesota	29.10	739.1	29.77	756.1	49	9.4	93	NE	26	11.6	.....	.....	10n	.....	NE	0.61	15.5	Heavy rain	
Eagle Pass, Texas	29.20	741.7	29.91	759.7	74	23.3	90	E	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Eastport, Maine	30.07	763.8	30.13	765.3	58	14.4	88	W	6	2.7	.....	0	6s	.....	W	0.10	2.5	Fair	
Edinburg, Texas	.....	.....	.....	.....	77	25.0	91	S	.....	.....	4	.....	5s	.....	S	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	69	20.6	52	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.45	748.0	30.16	766.1	57	13.9	81	S	5	2.2	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Escanaba, Michigan	29.14	740.1	29.79	756.7	52	11.1	93	SE	10	4.5	.....	.....	10n	.....	SE	1.22	31.0	Heavy rain	
Florence, Arizona	28.39	721.1	29.99	761.7	65	18.3	26	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.53	648.4	29.60	751.8	50	10.0	38	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.22	640.6	30.18	766.6	68	20.0	56	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.38	746.2	29.89	759.2	76	24.4	86	S	8	3.6	.....	.....	10ks	.....	S	0	0	Cloudy	
Fort Griffin, Texas	28.64	727.4	29.85	758.2	75	23.9	81	S	8	3.6	.....	0	5s	.....	SW	0	0	Fair	
Fort McKavett, Texas	27.75	704.8	29.58	751.3	74	23.3	76	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.73	729.7	29.80	756.9	70	21.1	90	NW	6	2.7	.....	0	8s	.....	NW	0	0	Cloudy	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	29.99	761.7	30.03	762.7	79	26.1	82	SE	5	2.2	.....	2k	0	SE	.....	0.01	0.3	Clear	
Graham, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Grand Haven, Michigan	29.18	741.2	29.80	756.9	65	18.3	84	S	36	16.1	.....	.....	10s	.....	S	0.15	3.8	Cloudy	
Indianapolis, Indiana	29.25	742.9	30.01	762.2	65	18.3	89	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.00	762.0	30.03	762.7	78	25.6	86	S	7	3.1	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.77	730.7	29.84	757.9	74	23.3	86	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.12	765.0	30.15	765.8	78	25.6	82	E	3	1.3	.....	0	0	.....	.....	0.33	8.4	Clear	
Keokuk, Iowa	29.13	739.9	29 71	754.6	72	22.2	80	SW	16	7.2	.....	0	4s	.....	S	0.10	2.5	Fair	
Key West, Florida	29.96	761.0	29.99	761.7	82	27.8	79	NE	8	3.6	.....	1cs	2ks	Calm	Calm	0.14	3.6	Fair	
Kittyhawk, North Carolina	30.21	767.3	30.23	767.8	72	22.2	90	NE	11	4.9	.....	2ck	5s	Calm	NE	0.15	3.8	Fair	
Knoxville, Tennessee	29.20	741.7	30.20	767.1	60	15.6	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.01	0.3	Dense fog	
La Crosse, Wisconsin	28.93	734.8	29.64	752.8	55	12.8	93	NE	4	1.8	.....	.....	10s	.....	Calm	1.75	44.5	Cloudy	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	52	11.1	41	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.53	750.0	29.85	758.2	78	25.6	86	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	25.02	635.5	30.29	769.4	36	2.2	90	N	3	1.3	.....	.....	10n	.....	N	0.10	2.5	Light rain	
Leavenworth, Kansas	28.92	734.6	29.72	754.9	72	22.2	85	SW	10	4.5	.....	.....	10ks	.....	SW	0.01	0.3	Cloudy	
Los Angeles, California	29.51	749.5	29.85	758.2	55	12.8	81	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.54	750.3	30.08	764.0	64	17.8	83	S	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.55	750.6	30.22	767.6	68	20.0	84	Calm	0	0	.....	0	8ks	.....	Calm	0.08	2.0	Cloudy	
Marquette, Michigan	29.15	740.4	29.84	757.9	52	11.1	86	NE	30	13.4	.....	.....	10ks	.....	NW	0.31	7.9	Cloudy	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.77	756.1	30.08	764.0	70	21.1	84	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.01	736.8	29.70	754 4	68	20.0	84	SW	26	11.6	.....	.....	10s	.....	SW	0.83	21.1	Cloudy	
Mobile, Alabama	30 08	764.0	30.12	765.0	69	20.6	90	N	4	1.8	.....	1c	0	N	.....	0	0	Clear	
Montgomery, Alabama	29.92	760.0	30.15	765.8	70	21.1	84	NE	2	0.9	.....	5k	0	E	.....	0	0	Fair	
Morgantown, West Virginia	29.13	739.9	30.18	766.6	59	15.0	88	SW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Mt. Washington, N. H.	23.92	607.6	30.28	769.1	31	—0.6	100	NW	40	17.9	.....	2c	2k	Calm	NW	1.13	28.7	Fair	
Nashville, Tennessee	29.61	752.1	30.13	765.3	65	18.3	84	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.11	764.8	30.23	767.8	67	19.4	84	N	6	2.7	.....	2c	0	Calm	.....	0.01	0.3	Clear	
New London, Connecticut	30.18	766.6	30.23	767.8	68	20.0	90	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.00	762.0	30.06	763.5	75	23.9	90	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.16	766.1	30.21	767.3	67	19.4	84	NW	4	1.8	.....	1c	0	.....	.....	Inap.	Inap.	Clear	
New York, New York	30.06	763.5	30.23	767.8	65	18.3	89	NW	1	0.4	.....	0	Haze	.....	Calm	0.35	8.9	Clear	
Norfolk, Virginia	30.19	766.8	30.25	768.3	70	21.1	90	NE	4	1.8	.....	.....	10s	.....	NE	0.18	4.6	Cloudy	
North Platte, Nebraska	27.24	691.9	29.84	757.9	47	8.3	62	NW	28	12.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Olympia, Washington Ter.	29.99	761.7	30.03	762.7	45	7 2	92	W	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.78	731.0	29.83	757.7	53	11.7	80	NW	24	10.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Oswego, New York	29.96	761.0	30.28	769.1	54	12.2	87	SE	2	0.9	.....	8c	0	Calm	.....	0.22	5.6	Fair	
Pembina, Dakota	29.32	744.7	30.18	766.6	31	—0.6	100	NW	16	7.2	.....	5cs	0	SW	.....	0.12	10.7	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Philadelphia, Pa	30.20	767.1	30.25	768.3	66	18.9	84	NW	4	1.8	.....	0	Fog	.....	Calm	0.08	2.0	Clear	
Phœnix, Arizona	28.72	729.5	.....	.....	66	18.9	41	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	25	— 3.9	50	SW	36	16.1	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.14	613.1	29.91	759.7	44	6.7	23	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.37	746.0	30.17	766.3	58	14.4	94	E	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.41	747.0	30.06	763.5	57	13.9	81	SE	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Maine	30.13	765.3	30.18	766.6	60	15.6	88	NW	2	0.9	.....	1ck	Haze	Calm	.....	0	0	Fair	
Portland, Oregon	30.02	762.5	30.13	765.3	46	7.8	92	Calm	0	0	.....	.....	10s;fg	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.81	630.2	30.17	766.3	43	6.1	59	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.19	747.4	29.98	761.5	77	25.0	86	SE	15	6.7	.....	8k	0	S	.....	0	0	Cloudy	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	77	25.0	82	NE	14	6.3	.....	2ck	5s	E	NE	0.15	3.8	Fair	
Red Bluff, California	29.52	749.8	29.88	758.9	61	16.1	31	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.79	756.7	30.00	762.0	82	27.8	67	SE	2	0.9	.....	0	5ks	.....	SE	0	0	Fair	
Rochester, New York	29.63	752.6	30.24	768.1	54	12.2	87	SW	2	0.9	.....	8c	Sm'e	Calm	Calm	0.09	2.3	Fair	
Roseburg, Oregon	29.54	750.3	30.12	765.0	40	4.4	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.78	756.4	29.86	758.4	53	11.7	61	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.36	745.7	29.91	759.7	70	21.1	75	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.11	764.8	30.13	765.3	76	24.4	91	E	4	1.8	.....	0	0	.....	.....	0.12	3.0	Clear	
St. Paul, Minnesota	28.85	732.8	29.65	753.1	52	11.1	86	NW	2	0.9	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	41.6	5.0	33	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.31	744.5	29.88	758.9	76	24.4	95	Calm	0	0	.....	.....	10ks	.....	S	0	0	Cloudy	
San Diego, California	29.81	757.2	29.88	758.9	62	16.7	88	N	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.44	747.8	30.10	764.5	60	15.6	88	S	13	5.8	.....	5ck;cs	5ks	Calm	S	Inap.	Inap.	Cloudy	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	70	21.1	85	NW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.83	757.7	29.89	759.2	56	13.3	87	SW	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	50	10.0	20	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.19	766.8	74	23.3	95	N	4	1.8	.....	2k	2ks	NE	N	0.38	9.7	Fair	
Shreveport, Louisiana	29.83	757.7	30.04	763.0	74	23.3	95	S	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
Silver City, New Mexico	24.34	618.2	.....	.....	48	8.9	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.19	766.8	30.22	767.6	73	22.8	95	S	2	0.9	.....	2cs	1ks	SW	S	0.03	0.8	Fair	
Springfield, Massachusetts	30.10	764.5	30.23	767.8	63	17.2	83	Calm	0	0	.....	2c	Fog	Calm	Calm	0	0	Fair	
Stockton, Texas	26.92	683.8	29.92	760.0	67	19.4	64	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.15	765.8	30.20	767.1	64	17.8	89	NW	7	3.1	.....	1c	0	Calm	.....	0	0	Clear	
Toledo, Ohio,	29.38	746.2	30.04	763.0	61	16.1	88	E	6	2.7	.....	0	5s	.....	SE	Inap.	Inap.	Fair	
Tucson, Arizona	.....	.....	.....	.....	68	20.0	41	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	77	25.0	91	NE	10	4.5	.....	0	5ks	.....	E	0	0	Fair	
Umatilla, Oregon	29.77	756.1	.....	.....	43	6.1	75	Calm	0	0	.....	.....	8s	.....	Calm	0	0	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	50	10.0	93	SE	.....	.....	4	.....	10s	.....	SW	0.04	1.0	Cloudy	
Uvalde, Texas	29.09	738.9	29.87	758.7	76	24.4	86	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Vicksburg, Mississippi	29.86	758.4	30.12	765.0	68	20.0	90	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.47	621.5	29.95	760.7	28	— 2.2	77	Calm	0	0	.....	0	0	.....	.....	0.25	6.3	Clear	
Visalia, California	29.55	750.6	29.92	760.0	51	10.6	73	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.13	765.3	30.25	768.3	67	19.4	95	Calm	0	0	.....	.....	Fog	.....	E	0.09	2.3	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	50	10.0	52	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.12	765.0	30.19	766.8	71	21.7	95	NE	2	0.9	.....	.....	10s	.....	NE	0.37	9.4	Cloudy	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	34	1.1	34	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.16	766.1	30.21	767.3	68	20.0	94	W	2	0.9	.....	0	5s	.....	W	0	0	Fair	
Yankton, Dakota	28.74	730.0	30.03	762.7	47	8.3	77	NW	24	10.7	.....	.....	10s	.....	NW	0.53	13.5	Cloudy	
Yuma, Arizona	29.62	752.3	29.78	756.4	66	18.9	78	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.06	763.5	30.10	764.5	30.5	— 0.8	95	W	9	4.0	.....	4k	0	NW	.....	0.06	1.5	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.96	761.0	29.98	761.5	83	28.3	79	E	2.4	1.1	.....	8k	4ks	E	E	0.02	0.5	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.86	758.4	29.88	758.9	81	27.2	78	NNE	8.4	3.8	.....	4c	2s	.....	NE	0	0	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	79	SE	5	2.2	.....	4c	8ks	E	.....	0.22	5.6	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	81	27.2	87	Calm	0	0	.....	8c	2n	Calm	NE	0.09	2.3	.....	James Gall.
Navassa, W. I	29.77	756.1	29.85	758.2	85	29.4	.....	NNE	17.8	8.0	.....	.....	.....	.....	.....	0.38	9.7	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762.2	30.01	762.2	81	27.2	87	E	.....	.....	2	3c	4k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.22	640.6	.....	.....	65.8	18.8	76	Calm	0	0	.....	.....	10s;ks	.....	.....	0.43	10.9	.....	Thomas Herran.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,126 (?) ft., or 343.2 ? m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,070 (?) ft., or 631.0 ? m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,170.7 ft., or 4,318.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 ?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,070 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0–10.	CLOUDS. Amount. Up'er 0–10.	CLOUDS. Amount. Low'r 0–10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.25	768.3	77	25.0	77	25.0	91	NE	6	2.7	.....	.....	2	.....	SE	0	0	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	30.17‡	766.8‡	.....	.....	61	16.1	88	W	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.81*	757.2*	73	22.8	67.8	19.9	89	NW	.....	.....	1	.....	2ks	.....	NW	Inap.	Inap.	.....	.....	Fair	
Adams. S. 45° 10′, W. 127° 28′	30.16	766.1	60	15.6	47	8.3	85	NW	.....	.....	1–2	.....	.....	.....	NW	0	0	Smooth	NW	Fair	
Alliance, Leghorn, Italy	29.52‡	749.8‡	.....	.....	68	20.0	65	W	.....	.....	0–1	.....	7	.....	NE	.....	.....	Light	N;E	Pleasant	
Ashuelot. Yokohama, Japan	29.88	758.9	72	22.2	69	20.6	95	NNW	.....	.....	2	.....	8	.....	Calm	.....	.....	Smooth	.....	Misty	
Alaska, Talcahuano, Chili	30.19	766.8	57	13.9	49	9.4	85	SSE	.....	.....	1	.....	10	.....	.....	0	0	Smooth	.....	Foggy	
Colorado. New York, N. Y.	30.22‡	767.7‡	.....	.....	68	20.0	79	NNE	5	2.2	.....	.....	.....	.....	.....	0.10	2.5	.....	.....	Foggy	
Constitution, Havre, France	29.79‡	756.7‡	.....	.....	58	14.4	82	SSW	.....	.....	3	.....	10	.....	SW	.....	.....	.....	.....	Cloudy	
Despatch. Volo, Turkey	29.87‡	758.7‡	.....	.....	80	26.7	58	SSE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.	
Essex, S. 28° 31′, W. 40° 0′	29.87	758.7	68	20.0	67	19.4	100	E	.....	.....	6	.....	10	.....	E	.....	.....	Long	E	Cloudy	
Franklin, Norfolk, Va.	30.34	770.6	72	22.2	70	21.1	100	NE	4.8	2.1	.....	.....	10	.....	E	2.6	66.	.....	.....	Cloudy	
Gettysburg Gibraltar	29.92‡	760.0‡	.....	.....	71	21.7	?	SW	.....	.....	4	.....	0	.....	.....	0.	0	Mod'ate	SW	Clear	
Guard, Bahia, Brazil	30.14	765.5	77	25.0	76	24.4	86	Calm	....	.....	0	.....	5	.....	SE	.....	.....	.....	.....	Cloudy	
Hartford, Rio de Janeiro, Brazil	29.94	760.5	.....	.....	76	24.4	82	SE	1.8	0.8	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	
Marion, Naples, Italy	29.61	752.1	72	22.2	70	21.1	75	SSE	.....	.....	4	.....	10	.....	S	Light	Light	.....	.....	Cloudy	
Michigan, Erie, Pa.	30.04†	763.0†	.....	.....	56	13.3	75	ESE	.....	.....	6	.....	10	.....	SW	.....	.....	.....	.....	Cloudy	
Monocacy. Yokohama, Japan	29.80‡	756.9‡	.....	.....	70	21.1	95	N	.....	.....	1	.....	2	.....	N	.....	.....	.....	.....	Fair	
New Hampshire, Port Royal, S. C.	30.38†	771.6†	.....	.....	75	23.9	100	E	8	3.6	.....	.....	10	.....	N	5.1	130.	.....	.....	Cloudy	
Onward, Callao, Peru	30.08†	764.0†	.....	.....	63	17.2	83	SSE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.34	770.6	68	20.0	68	20.0	100	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China	30.06	763.5	63	17.2	62	16.7	94	E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining	
Plymouth. Off Sandy Hook Light-house	30.30	769.6	70	21.1	71	21.7	95	NNW	.....	.....	2	.....	8?	.....	.....	.....	.....	Smooth	.....	Clear?	
Powhatan, N. 40° 29′, W. 73° 52′	30.26‡	768.6‡	..	.....	67	19.4	95	NW	4.2	1.9	.....	.....	2	.....	.....	0.8	8.	Smooth	NW	Clear	
Ranger. Hong-Kong, China	29.92	760.0	85	29.4	85	29.4	79	S	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo. Brownsville, Texas	29.96	761.0	78	25.6	78	25.6	95	SE	.....	.....	1	.....	1	.....	N	.....	.....	.....	.....	Clear	
Santee, Annapolis, Md	30.23‡	767.8‡	.....	.....	67	19.4	95	E	.....	.....	0–1	.....	10	.....	E	0.04	1.0	.....	.....	Misty	
Saratoga, League Island, Pa	30.16*	766.1*	.....	.....	72	22.2	80	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Hazy	
St. Louis, League Island, Pa	30.14	765.5	68	20.0	67	19.4	84	W	1	0.4	.....	.....	2	.....	W	0.08	2.0	.....	.....	Fair	
Supply, Havre, France	29.84	757.9	60	15.5	58	14.4	82	SW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Overcast	
Swatara, Boston, Mass.	30.20‡	767.1‡	.....	.....	66	18.9	84	NNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Trenton, Southampton, England	29.70‡	754.4‡	.....	.....	57	13.9	100	SW	.....	.....	4	.....	10	.....	W	0.4	10.	.....	.....	Showery	
Tuscarora. La Paz, Mexico	29.70	754.4	80	26.7	81	27.2	87	SW	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Clear	
Vandalia, Barcelona, Spain	29.74‡	755.4‡	.....	.....	73	22.8	50	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.22‡	767.6‡	.....	.....	66	18.9	84	NW	5	2.2	.....	.....	2	.....	Calm	0	0	.....	.....	Fair	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Port Townsend, W. T		29.80*	759.2*				SE			3		Haze						Hazy	Capt. Cobb.
S. S City of Peking																			Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 19° 26′, W. 105° 27′		29.04†	760.5†	83	28.3	96	E			3.4		6		W	0	Small	ESE	Misty	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghost.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 40° 38′, E. 162° 23′		29.40*	746.7*	68	20.0	56	SSW			6		n		SW		Rough	SW	Raining	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.89†	759.2†				E			3		8			Blank			Squally	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 54′, W. 163° 03′		30.27	768.8	64	17.8	94	N			2		10		NW		3	NW	Misty	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool		29.50*	749.3*	64	17.8	100	SE			1		5		SE	Light			Light rain	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.23	767.8	80	26.7	87	W			1		7?		W	Small			Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 41° 36′ W. 64° 27′		30.22*	767.6*				W	12	5.4			4		S		Smooth		Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 20° 00′, W. 65° 24′		29.83	757.7	84	28.9	79	ENE	18	8.0		5c	5k	SW	E	0.18 in or 4.6 mm.	Heavy sea	NE	Squally	Capt. James Jorgen sen.
Schooner Florence, N. 49° 59′ W. 52° 9′		30.04*	763.0*				NE			3	1c	9s		W	0.01 in or 0.3 mm.			Fair?	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 26, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.03	762.8	68.4	20.2	83	NE	.....	.....	3	.....	0	.....	.....	0	0	Clear.	Dr. Ollive.
Nemours	.....	.....	30.00	762.0	75.6	24.2	59	N	.....	.....	3	.....	1	.....	.....	0	0	Very fair.	Kesxuche.
Algiers	.....	.....	29.98	760.3	77.7	25.4	62	WNW	.....	.....	5	.....	1	.....	.....	0	0	Very fair.	Tourillere.
La Calle	.....	.....	29.90	759.5	75.2	24.0	70	NW	.....	.....	6	.....	6	.....	.....	0.067	1.7	Cloudy.	Foufrede.
Tunis	.....	.....	29.88	758.9	69.3	20.7	84	W	.....	.....	5	.....	6	.....	.....	0.008	0.2	Cloudy.	Jacques.
Sfax	.....	.....	29.98	761.5	78.8	26.0	.....	W	.....	.....	3	.....	0	.....	.....	0	0	Clear.	Gau.
Saida	.....	.....	30.01	762.2	81.0	27.2	28	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair.	Herbin.
Tebessa	.....	.....	29.91	759.7	68.5	20.3	28	NNW	.....	.....	6	.....	2	.....	.....	0	0	Fair.	Watrin.
Geriville	.....	.....	29.99	761.7	84.2	29.0	46	E	.....	.....	3	.....	0	.....	.....	0	0	Clear.	Brugnlaux.
Laghouat	.....	.....	30.06	763.5	74.1	23.4	34	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear.	Bertrand.
Biskra	.....	.....	30.01	762.2	83.5	28.6	33	NW	.....	.....	4	.....	1	.....	.....	0	0	Very fair.	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.00	736.5	29.53	750.0	62.8	17.1	92	NE	.....	.....	4	.....	10	.....	.....	0.165	4.2	.....	Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.98	736.0	29.71	754.7	70.9	21.6	80	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	28.85	732.8	29.69	754.1	71.4	21.9	69	Calm	.....	.....	0	.....	10s	.....	.....	0	0	.....	Julius Mikonk.
Gratz	28.44	722.4	29.66	753.4	59.5	15.3	74	NW	.....	.....	5	.....	10	.....	.....	0.528	13.40	.....	Andreas Rospini.
Hermannstadt	28.24	717.2	29.65	753.0	72.7	22.6	53	S	.....	.....	3	.....	10	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremtmünster	28.45	722.7	29.78	756.5	52.5	11.4	93	W	.....	.....	5	.....	10	.....	.....	1.161	29.5	.....	Prof. C. Wagner
Lemberg	28.76	730.6	29.71	754.5	71.6	22.0	62	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.33	744.9	29.44	747.7	60.6	15.9	88	NW	.....	.....	2	.....	10s	.....	.....	0.638	16 2	Rainy.	I.R.Hydrographic Office
Szathmar	29.25	742.9	29.69	754.0	80.2	26.8	47	SE	.....	.....	6	.....	8	.....	.....	0.038	0.2	Raining.	Julius Csics, S. J.
Szegedin	29.55	745.4	29.61	752.2	69.8	21.0	77	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.48	748.9	29.59	751.5	61.9	16.6	89	S	.....	.....	1	.....	10	.....	.....	0.516	13.1	Raining.	P. Busin.
Vienna	29.04	737.6	29.75	755.6	55.2	12.9	91	WNW	.....	.....	2	.....	10	.....	.....	0.252	6.4	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.48	723.3	29.98	761.6	52.3	11.8	95	W	.....	.....	2	.....	10	.....	.....	0.004	0.1	Foggy	Prof. M. Passau.
Brussels	29.74	755.5	29.95	760.6	59.2	15.1	55	WNW	.....	.....	3	.....	9	.....	NW	0	0	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	29.83	757.7	29.96	761.0	59.0	15.0	74	W	.....	.....	2	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	OBSERVER.
Aberdeen	29.59	751.6	29.69	754.1	54.0	12.2		W	18	8.0			4			0	0	Blue sky	W. Boswell.
Ardrossan	29.76	755.9	29.78	756.4	54	12.2		W			3		7					D. clouds	George Carrick.
Armagh, Observatory			29.90	759.4	51.1	10.6		SW	8	3.6			8					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.94	760.5	51.4	10.8		WSW	20	8.9			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.50	749.3	29.90	759.4	55.9	13.3		W			3		6			0.19	4.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.95	760.7	85	29.4		E			1		3					D. clouds	Pvt. G. W. Roberts, A. [H. O.
Cambridge, Observatory			29.98	761.5	59.0	15.0		W			1		1					D. clouds	H. Todd.
Cardington			29.97	761.2	57.4	14.1		W			1		4					D. clouds	John McLaren.
Chatham, School M. E.	29.87	758.7	30.00	762.0	55.7	13.2		W			1		6					D. clouds	Lt. Col. C. N. Martin, R.E.
Dartmoor	28.55	725.2	30.02	762.5	54.0	12.2		NW			3		9					D. clouds	Alexander Watt.
Donaghadee	29.84	757.9	29.87	758.7	56	13.3		WSW			4		5					D. clouds	J. Mac Gowan.
Dover	29.92	760.0	29.95	760.7	57	13.9		NW			1		4					Misty	J. Costello.
Eccles, (near Manchester)			29.90	759.4	56.0	13.3		W	6.8	3.0			8					D. clouds	Thomas Mackereth.
Falmouth, Observatory	29.86	758.4	30.08	764.0	58.7	14.8		WNW			1		8					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A. H. O.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	87	30.6		S			1		5					D. clouds	
Galway, Queen's College			29.91	759.7	59	15.0		WSW			3		8					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.98	761.5				E			2		1					Blue sky	Corpl. Wm. Allen, A. H. O.
Glasgow, Observatory	29.50	749.3	29.70	754.4	53.5	11.9		W			5		4					D. clouds	D. G. Maclean.
Great Yarmouth	29.93	760.2	29.93	760.2	56	13.3		W			3		3					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.82	757.4	30.00	762.0	56.8	13.8		W			1		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.84	757.9	30.06	763.5	58.5	14.7		NW			2		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.13	765.3	63	17.2		NW			1		3k			0.10	2.5	Fine	M. P. Moyle.
Holyhead	29.91	759.7	29.96	761.0	56	13.3		WSW			4		8					D. clouds	John Tilston.
Jersey	29.79	756.7	30.08	764.0	57.8	14.3		N			2		2					D. clouds	J. Fisher.
Kew, Observatory	29.96	761.0	30.00	762.0	57.1	13.9		WNW	10	4.5			6					D. clouds	The Staff.
Kingstown	29.93	760.2	29.96	761.0	55	12.8		W			3		9					Overcast	George Mitchell.
Leicester, Museum			29.96	761.0	56.9	13.8		NE			2		9					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.69	754.1	29.76	755.9	76	24.4		NW			2		3c					D. clouds	Sergt. Beckett.
Nairn	29.58	751.3	29.67	753.6	53	11.7		W			2		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.99	761.7	80.0	26.7		NE			3		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.76	755.9	29.95	760.7	58.8	14.9		SW			3		5k		W	0.204	5.18	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.44	747.8	29.97	761.2	51.2	12.3		WSW			4		8					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.00	762.0	56	13.3		W			2		7					D. clouds	H. E. Bellamy.
Plymouth	29.97	761.2	30.04	763.0	57.3	14.1		NW			2		8					D clouds	John Merrifield.
Roche's Point	30.00	762.0	30.04	763.0	56	13.3		W			4		8					Cloudy	W. Kennedy.
Saint Ann's Head	29.86	758.4	30.02	762.5	58	14.4		W			3		4						John C. Walker.
Sandwick Manse, (Orkneys.			29.57	751.1	50.4	10.2		W	22	9.8			5					Rain & hail	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey																			Sergt. W. H. Lyne.
Sheffield	29.66	753.4	29.94	760.5	57.0	13.9		WSW			4		5			0.01	0.3	D. clouds	W. F. Cooper.
Silloth, Rectory	29.81	757.2	29.84	757.9	55.6	13.1	64	W			3		6			0.095	2.42	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.52	749.8	29.92	760.0	53.0	11.7		SW			3		10					Drizzling	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.79	756.7	30.01	762.2	56.6	13.7		NW			1		3					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso			29.62	752.3	46	7.8		W			4		10					Raining	John Trotter.
Truro, Royal Institution			30.08	764.0	61	16.1		W			4		7.					D. clouds	W. Newcombe.
Valencia, Observatory	30.00	762.0	30.02	762.5	57.9	14.4		WSW	18	8.0			10					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.22	742.2	50.0	10.0	82	NW			2		10kn			0.40	10.2	Squally	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.99	761.7	30.18	766.5	73.3	22.9	61	ESE	20.5	9.2		0	4		; ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.45	748.0	29.54	750.3	50.0	10.0	90	W	7	3.1			10			0.01	0.3	Showery	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Corrected Inches	Corrected Millimeters	Reduced Inches	Reduced Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Clouds Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20′, W. 44° 25′			30.20	767.1	80	26.7		NNE			3		2			3	NW; N	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 21° 25′, W. 41° 20′			30.01	762.2	87	30.6		Calm			0		3	SW			N	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 43° 10′, W 41° 5′			30.02	762.5	65	18.3		WSW			6		8			5	W	Showery	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity Miles per hour.	WIND. Velocity Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			
San José	26.22	666.0			65.8	18.8	98	NE			1	3ck				Inap.	Inap.		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.65	753.2	29.70	754.4	57.6	14.2	74	NW			2		10						
Fanöe	29.71	754.6	29.73	755.1	58.3	14.6	62	W			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Farõe)																			
Vestervig	29.47	748.4	29.63	752.7	53.6	12.0	74	W			6		5					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.52	749.8	30.07	763.8	60.8	16	79	NE			1		5		SW	0.047	1.2	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	29.75	755.5	29.83	757.6	69.4	20.8	48	N			6		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.57	751.1	30.12	765.1	60.1	15.6	81	SW			2		10n		SW	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.78	755.1	30.01	762 2	59.7	15.4	61	NW			1		5		NW	0.026	0.65	Cloudy	Frere Eugene Marie, Director.
Besançon	29.13	739.8	30.02	762.4	67.7	14.3	60	SSW			2		5		N	0.051	1.3	Cloudy	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.59	749.3	30.05	763.3	59.0	15	78	SW			1		10kn		SW	0	0	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.81	757.2	30.06	763.4	61.2	16.2	67	NNE			1		7k		N	0.118	3.00		The Staff.
Carcassonne, Normal School	29.55	750.5	29.95	760.8	69.1	20.6	68	W			2		0			0	0	Clear	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.37	745.9	29.92	760.0	74.7	23.7	68	SW			2		10		SE	SE	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'	29.03	752.6	29.94	760.5	60.1	15.6	83	NW			1		10				0.020	0.5	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.03	727.1	29.93	760.1	63.3	17 4	68	N			1		8		NW		0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.13	739.9	30.01	762.2	54.5	12.5	90	W			1		10kn		W		0	0	Covered	Dr. Coulet, Director.
Commune de Grèasque*	28.65	727.6	29.79	756.6	69.4	20.8	21	NW			3		0				0	0	Clear	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. Schoo																			Mouillot, Director.
Le Mans, Normal School	29.69	754.2	30.00	761.9	62.8	17.1	70	N			3		8		S	N	0.020	0.50	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.2	30.01	762.2	59.0	15	72	NE			1		5			NW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	30.02	762.6	30.06	763.4	61.0	16.1	77	N			1		5		N		0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	28.96	735.5	30.00	762.0	53.4	11.9	90	W			1		10n			W	0.16	4.	Covered	M. Barbier, Director.
Nismes, Normal School	29.61	752.2	29.83	757.7	74.1	23.4	60	N			6		0							Boyer, Director.
Privas, Normal School	28.87	733.4	29.92	759.9	64.0	17.8	53	N			3		kn		N	N	0	0		M. Cantier.
Puy de Dome (Summit)	25.13	638.3			44.4	6.9	100	NW			2						0.161	4.1	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.99	761.7	30.02	762.5	69.8	20.7	88	NW			1		10		NW	NW	0.08	2.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.92	760.0	30.01	762.2	61.5	16.4	56	NW			1		5			W	0.035	0.9	Cloudy	F. Lucard, Director.
Saint Malo (Port)			30.02	762.5	62.4	16.9	60	N			2		1			NW	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.82	757.4	29.98	761.6	58.6	14.8	90	NW			1		10			N	0.059	1.5	Covered	E. Renou.
Tarbes, Normal School	28.89	733.9	29.95	760.8	64.4	18	80	SW			4		10			WSW	W	0.28	7.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director
SUB-STATIONS.																			
Fort de France, Martinique	29.87	758.6	29.89	759.3	80.6	27											0.08	2.		L'Abbé Marchés.
Lyons			29.98	761.4	63.1	17.3	64						4				0	0		L. Jays.
Marseilles, Observatory			29.71	754.5	70.2	21.2	28	NW			6		0				0	0	Clear	The Staff.
Mont-Louis	24.83	630.7	30.15	765.7	57.6	14.2	44	SE			4		3		NW		0	0		M. Cave.
Nice			29.63	752.7	67.8	19.9	75	SW			1		0				0.685	17.4		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.70	754.4	29.98	761.4	57.6	14.2	86	N			2		10				0.083	2.1		Marié Davy, Director
Perpignan			29.93	760.2	70.7	21.5	68	N	22.4	10.00			4			NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																				M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.58	573.9			40.6	4.8		SW			1		10				1.508	38.3	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.33	744.9	30.05	763.3	68.0	20.0	61	WNW			3		5				0.010	0.25		The Staff.
Tours																				C. Marquet.
Versailles			30.00	761.9	60.6	15.9	69	N			1		10				0.058	1.48	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	759.0	29.91	759.7	75.7	24.3	79	N	4.7	2.1			10n				1.095	27.8	Raining	Marc Decheyrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.88	733.6	29.72	754.8	60.8	16.0	59	W			3		3	W		0	0		Prof. Dr. Hoh.
Berlin	29.67	753.5	29.84	757.8	63.7	17.6	62	NW			1		7			0	0		Prof. Arndt.
Breslau	29.28	743.6	29.80	757.0	66.9	19.4	66	NW			3		10			Inap.	Inap.	Sprinkling.	Royal University Obs'y
Carlsruhe	29.51	749.6	29.93	760.3	59.0	15.0	71	W			2		10			0.638	16.2		Albert Senz.
Cassel	29.34	745.1	29.94	760.4	61.2	16.2	83	ENE			2		8	NNE		0	0		Dr. H. Möhl.
Crefeld	29.72	755.0	29.89	759.1	60.4	15.8	64	W			2		6k			0	0		Director Lose.
Emden	29.89	759.3	29.93	760.2	58.3	14.6	57	WNW			3		2			0	0		Prof. Prestel.
Frankfort on the Main	29.58	751.2	29.94	760.4	62.2	16.8		WSW			2		6			0.008	0.2		Physical Society.
Friedrichshafen	28.55	725.2	29.93	761.4	56.3	13.5	81	WSW			3		10	W		0.075	1.9		M. Wilhelm.
Hamburg	29.76	755.9	29.83	757.7	58.3	14.6	61	W			3		6k			0.031	0.8	Fair	Captain F. Hegemann.
Kiel	29.78	756.5	29.80	756.9	58.8	14.9	55	WNW			3		4			0.021	0.54		Prof. G. Karsten.
Königsberg, (Prussia)	29.64	752.9	29.72	754.9	75.2	24.0	62	SW			6		4			0	0		Prof. E. Luther.
Köslin			29.74	755.4	58.6	14.8		SE			2		4			0	0		H. Müller.
Leipsic, Observatory	29.46	748.3	29.88	758.9	61.5	16.4	61	NW			1		8	WNW		0	0		Prof. Bruhns.
Memel, Naval School	29.72	754.8	29.76	756.0	72.5	22.5	62	SSE			4		7cs						Reinbrecht and Skalweit.
Neufahrwasser	29.72	754.9	29.74	755.3	67.6	19.8	78	SSW			3		9	SSW		0	0		A. Lothes.
Posen	29.54	750.3	29 82	757.3	71.2	21.8	58	W			2		10			0.020	0.5		Dr. Magener
Strassburg (in Alsace)	29.44	747.7	29.98	761.5	60.6	15.9	66	SW			1		10	N		0.472	12.00		Astronomical Observatory.
Stuttgart	28.97	735.8	29.90	759.4	59.9	15.5	45	N			1		3	N		0	0		Prof. Schoder.
Treves, (Trier)	29.41	747.1	29.94	760.4	55.0	12.8	86	SW			2		10			0.001	0.02	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.40	721.3	29.88	759.0	56.5	13.6	65	W	8.1	3.6			10		NW	0.205	5.1		Dr. Von Bebber.
Wustrow, Naval School	29.75	755.7	29.79	756.7	58.3	14.6	83	WSW			2		10			0.098	2.5		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.34	745.2	29.72	754.8	78.1	25.6		SW			4.0		10					Thunder-storm	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.76	755.8	29.81	757.1	84.7	29.3	66	WSW	16?	7.2?			1			0	0	D. clouds	
Deesa	29.34	745.2	29.81	751.1	87.7	30.9	58	Calm					0			0	0	Blue sky	
Bombay	29.78	756.3	29.81	757.2	82.9	28.3	80	NW	7	3.1			8	W	W	0	0	D. clouds	
Poona	27.78	705.6	29.78	756.4	77.2	25.1	79	W					10		W	0	0	Threatening	
Lahore	28.96	735.4	29.68	753.8	92.1	33.4	33	N	0.8	0.4			0			0	0	Blue sky	
Belgaum	27.30	693.4	29.84	758.0	73.9	23.3	89	W	6	2.7			8	ENE	W	0	0	D. clouds	
Roorkee	28.80	731.5	29.68	754.0	84.8	29.3	59	Calm	2	0.9			1			0	0		
Agra	29.15	740.5	29.70	754.4	92.6	33.7	43	W								0	0		
Nagpur	28.70	728.9	29.74	755.4	79.6	26.4	85	Calm	2.8	1.2			9	SW		0.14	3.6	D. clouds	
Lucknow																			
Allahabad	29.39	746.6	29.70	754.4	85.1	29.5	76	Calm	0.7	0.3			1		NW	0.03	0.8	D. clouds	
Patna	29.53	750.1	29.71	754.7	80.9	27.2	92	E	1.0	0.4			10	E	E	0.12	3.0	Drizzling	
Hazaribagh	27.72	704.1	29.72	755.0	78.0	25.6	81	W	4.4	2.0			9			0.05	1.3	Thunder-storm	
Cuttack	29.63	752.6	29.71	754.7	84.5	29.2	77	ENE	0.9	0.4			2			0	0	Blue sky	
Calcutta (Alipore)	29.71	754.6	29.73	755.2	81.8	27.7	92	S	1	0.4			3			0	0	D. clouds	
Goalpara	29.36	745.8	29.75	755.6	82.7	28.2	84	NNW	1.4	0.6			7			0	0	D. clouds	
Chittagong																			
Sibsagar	29.41	747.0	29.74	755.5	82.4	28.0	81	ENE	2.5	1.1			10	W	W	1.27	32.3	D. clouds	
Jubbulpore	28.41	721.5	29.76	755.8	85.0	29.4	63	NNE	1.3	0.6			2			0	0	D; clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.18	741.1	29.58	751.3	63.5	17.5	86	Calm	0	0	.....	.....	10	.....	.....	0.642	16.3	.....	Prof. Giovanni Clodig.
Padua	29.47	748.5	29.58	751.2	62.4	16.9	84	NW	3.8	1.7	.....	.....	10	ENE	.....	0.236	6.0	.....	Prof. Dott. Lorenzoni
Vicenza	29.39	746.6	29.58	751.4	65.5	18.6	72	SW	1.3	0.6	.....	.....	8	E	.....	0.173	4.4	.....	Cont. Alm. Da Schio.
Bergamo	28.31	719.1	29.60	751.7	68.7	20.4	69	S	.....	.....	1	.....	8	.....	.....	0.827	21.0	.....	Prof. Trionfini Carlo.
Milan	29.09	738.8	29.59	751.6	67.3	19.6	60	N	.....	.....	2	.....	4	NE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.76	730.6	29.65	753.2	69.1	20.6	58	SW	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.80	706.0	29.67	753.5	66.6	19.2	43	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.41	747.1	29.63	752.6	70.9	21.6	27	SW	.....	.....	2	.....	3	NNW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.44	747.7	29.60	751.9	73.9	23.3	38	N	.....	.....	4	.....	0	.....	.....	0.012	0.3	.....	Prof. G. M. Garibaldi.
Parma	29.32	744.8	29.63	752.7	68.1	20.1	67	NW	.....	.....	2	.....	10	.....	.....	0.425	10.8	.....	Prof. P. Pigorini.
Florence	29.34	745.2	29.59	751.6	70.7	21.5	56	W	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	Cav. F. Meucci
Leghorn	29.50	749.4	29.59	751.5	66.2	19.0	75	W	2.5	1.1	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.05	712.5	29.58	751.2	57.7	14.3	76	W	.....	.....	1	.....	10	.....	.....	0.322	8.2	.....	Prof. P. Serpieri
Rome	29.40	746.8	29.58	751.2	73.6	23.1	56	W	9.4	4.2	.....	.....	6	.....	.....	0.150	3.8	.....	Prof. P G. S. Ferrari.
Naples, O. U.	29.40	746.8	29.60	751.8	70.7	21.5	49	S	.....	.....	1	.....	3	WSW	.....	0.535	13.6	.....	Prof. L. Palmieri.
Lecce	29.34	745.1	29.58	751.4	72.3	22.4	66	SW	16.8	7.5	.....	.....	5	SW	.....	1.555	39.5	.....	Prof. C. De Giorgi.
Cagliari	29.54	750.3	29.73	755.1	66.0	18.9	61	NW	.....	.....	4	.....	8	NW	.....	0.516	13.1	.....	Prof. A. Pacinotti.
Cosenza	28.78	730.9	29.68	753.9	62.6	17.0	80	NE	.....	.....	1	.....	9	.....	.....	1.543	39.2	.....	Prof. F. D. Conti.
Palermo	29.46	748.2	29.71	754.5	68.7	20.4	61	W	4.9	2.2	.....	.....	7	.....	.....	0.764	19.4	.....	Prof. G. Cacciatore.
Syracuse	29.63	752.5	29.70	754.4	74.3	23.5	40	SW	12.5	5.6	.....	.....	5	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.09	738.9	29.65	753.0	68.4	20.2	65	ESE	8.1	3.6	.....	.....	8	SE	.....	0.209	5.3	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.69	754.1	29.89	759.2	76.6	24.8	92	SW	8.1	3.6	.....	.....	10s	.....	.....	0.905	22.99	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.77	756.1	29.83	757.7	67.7	19.8	85	NE	5.8	2.6	.....	.....	10s;n	.....	.....	0.125	3.18	Light rain	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
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NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	62.6	17.0	82	NW	.....	.....	2	8cs	0	.....	.....	0.827	21.0	Cloudy	P. Ceballos.
Guadalajara	26.12	638.0	30.09	764.2	67.2	14.0	73	N	.....	.....	1	0	8k	.....	E	0.473	12.0	Misty	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.50	622.4	30.07	763.8	59.9	15.5	90	SW	.....	.....	1	0	0	.....	.....	0.059	1.42	Blue sky	Prof. M. Leal.
Mexico	23.17	588.6	30.20	767.1	54.0	12.2	87	NW	1.1	0.5	.....	0	10k	.....	.....	1.55	39.3	.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.0	15.0	81	N	.....	.....	1	0	1s	.....	.....	Inap.	Inap.	Clear	M. V. de Leon, M. E.
Puebla	23.39	594.2	30.05	763.3	62.8	17.1	89	NNW	.....	.....	.....	5c	4ns	Calm	Calm	0.20	5.04	Cloudy	Prof. B. Gonzalez.
Tlacotulpam	29.06	761.0	29.97	761.3	75.7	24.3	92	N	.....	.....	2	0	10n	.....	N	1.859	47.2	Rainy	M, M. Cházaro.
San Luis Potosi	24.34	617.8	30.23	767.8	57.0	13.9	50	E	3.1	0.4	.....	0	0	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	30.04	763.1	30.07	763.8	81.5	27.5	89	Calm	0	0	.....	.....	10ns	.....	N	0.118	3.0	Threatening	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	56.3	13.5	79	NE	.....	.....	2	0	4	.....	NE	0	0	Dense fog	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.40	594.4	30.16	766.1	51.1	10.6	88	NE	0.4	0.2	.....	5	2	Calm	Calm	0.288	7.3	Misty	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.38	720.1	30.01	762.2	77.9	25.5	85	Calm	0	0	.....	1	2	E	E	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.98	761.5	29.98	761.5	58.3	14.6	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.016	0.4	.....	
Groningen	29.82	757.4	29.89	759.1	56.7	13.7	.....	NW	.....	.....	3	.....	.....	.....	.....	0.016	0.4	.....	.....
Helder	29.89	759.2	29.89	759.2	57.7	14.3	.....	W	.....	.....	4	.....	.....	.....	.....	0	0	.....	.....
Hellevoetsluis	29.91	759.7	29.91	759.7	59.7	15.4	61	WNW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Utrecht	29.85	758.1	29.89	759.3	58.8	14.9	64	WNW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.35	745.6	29.41	747.0	54.0	12.2	84	SSE	7.4	3.3	.....	.....	4	.....	.....	0.512	13.0	.....	
Brönö	29.76	755.8	29.80	756.8	53.6	12.0	71	SSE	29	13	.....	.....	6	.....	.....	0	0	.....	
Christiania	29.32	744.6	29.46	748.2	55.8	13.2	94	SSE	9	4	.....	.....	10	.....	.....	0.618	15.7	.....	
Tromsö	30.09	764.3	30.13	765.4	45.0	7.2	69	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.07	763.7	30.25	768.4	72.7	22.6	74	ENE	2.5	1.1	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.04	737.5	30.03	762.7	77.5	25.3	29	NNE	4.3	1.9	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.1	30.13	765.3	75.9	24.4	50	SW	9.8	4.4	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	754.9	30.07	763.8	73.2	22.9	44	NNE	18.6	8.3	.....	.....	7	N	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.21	767.3	30.28	769.1	70.9	21.6	72	SSE	.....	.....	.....	.....	10	.....	.....	0.114	2.9	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.92	760.0	79.7	26.5	.....	W	.....	.....	2	.....	2	.....	W	1	.....	D. clouds....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 15° 10′, E. 11° 52′	.....	.....	30.02	762.5	74.1	23.4	.....	ESE	.....	.....	3	.....	10	.....	ESE	3	SW	D. clouds....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.97	761.1	83.3	28.5	.....	NE	.....	.....	3	.....	8	.....	NE	2	S	D. clouds....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.83	757.7	85.1	29.5	.....	E	.....	.....	3	.....	3	.....	E	2	SE	D. clouds....	M. T. Guimaraes, Com'd't.
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Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.34	745.2	29.74	755.4	73.0	22.8	64	SE	7	3	.....	.....	9c;ck	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.48	748.7	29.88	758.9	71.1	21.7	63	SSE	2	1	.....	.....	4	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.67	753.7	29.91	759.6	69.6	20.9	67	SE	4	2	.....	.....	8c	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.97	761.1	29.98	761.5	59.7	15.4	76	SSE	11	5	.....	.....	8n;s	.....	.....	.....	.....	Light clouds	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.31	744.4	29.91	759.7	75.4	24.1	33	SE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.87	758.8	29.95	760.6	81.3	27.4	40	SSE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.94	760.4	29.96	760.9	75.0	23.9	50	ENE	7	3	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.70	754.4	30.25	768.3	58.6	14.8	54	S	7	3	.....	.....	1k	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.80	756.9	30.00	761.9	77.7	25.4	28	NL	18	8	.....	.....	3	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	30.26	768.6	30.28	769.1	46.2	7.9	86	WNW	2	1	.....	.....	8k	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.44	722.3	29.78	756.4	78.3	25.7	43	NW	9	4	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.95	760.6	29.86	758.5	78.8	26.0	38	Calm	0	0	.....	.....	4c	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Krotkowo*	29.66	753.1	30.12	765.1	53.1	11.7	35	NNE	11	5	.....	.....	2ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.35	760.8	30.23	767.8	53.2	11.8	59	N	9	4	.....	.....	2	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.13	739.9	30.10	764.4	41.5	5.3	86	W	4	2	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.54	750.4	29.77	756.1	78.6	25.9	41	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.28	718.2	29.94	760.4	66.9	19.4	94	Calm	0	0	.....	.....	9	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.28	743.6	29.50	756.8	51.4	10.8	71	SW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.31	744.5	29.60	751.9	42.3	5.7	88	SW	2	1	.....	.....	1	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.05	760.7	30.09	764.3	63.0	17.2	46	NE	7	3	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.79	756.6	29.89	759.2	73.4	23	54	SW	2.1	0.92	.....	1c	.....	NW	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.02	762.5	30.08	763.9	69.1	20.6	85	NW	1.9	0.83	.....	.....	10	.....	.....	0.213	5.4	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.7	.....	.....	67.1	19.5	73	NE	3.1	1.39	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.84	707.1	29.97	761.3	78.3	25.7	39	SW	2.2	1.00	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.82	757.4	29.97	761.1	82.8	28.2	35	SW	3.6	1.61	.....	1	2	W	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.18	741.2	30.07	763.6	66.2	19.0	73	NW	4.3	1.94	.....	.....	9	.....	.....	0.091	2.3	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.92	759.9	29.98	761.5	80.9	27.2	82	E	6.7	3.0	.....	5c	1sk	W	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.7	30.00	762.1	76.8	24.9	40	SW	9.8	4.4	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.86	758.4	29.95	760.7	82.8	28.2	91	SE	1.1	0.50	.....	8s	5k	E	SE	0	0	Cloudy	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.12	765.0	30.16	766.0	47.1	8.4	.....	E	.....	.....	4	.....	10	.....	.....	0'	0	.....	
Umea	29.93	760.3	30.10	764.6	46.4	8.0	100	E	.....	.....	4	.....	10	.....	.....	1.079	27.4	.....	
Hernosand	29.76	756.0	29.82	757.3	47.3	8.5	99	E	.....	.....	6	.....	10	.....	.....	0.071	1.8	.....	
Stockholm	29.48	748.9	29.66	753.4	60.8	16.0	90	ESE	.....	.....	2	.....	10	.....	.....	0.020	0.5	Foggy	
Wisby	29.63	752.5	29.69	754.0	65.5	18.6	79	S	.....	.....	6	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.55	750.6	29.63	752.5	60.3	15 7	97	ESE	8.5	3.8	.....	.....	10	.....	S	0.213	5.40	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	724.9	29.95	760.7	59.9	15.5	48	N	.....	.....	2	.....	0	.....	.....	0.012	0.3	Clear.....	The Observatory.
Zurich	28.37	720 5	30.00	761.0	56.3	13.5	75	S	.....	.....	1	.....	3	.....	.....	0.012	0.3	Bright.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.8 mm.; Thermometer, —1.0 cent.; Relative Humidity, —18 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.83	757.6	78.1	25.6	60	NNE	7	3.0	.....	.....	4	.....	SW	0.089	1.0	.....	The Observatory.
Valona	.....	.....	29.72	754.8	76.1	24.5	.....	SW	.....	.....	3	.....	5	.....	.....	2.32	59.	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.74	755.4	29.86	758.4	81.5	27.5	62	NW	.....	.....	2	.....	5s	.....	SE	0	0	D. clouds....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.50	749.3	29.79	756.7	65	18.3	.....	SW	5	2.2	.....	.....	10n	.....	SW	0.10	2.5	Light rain...	W. R. Bigg.
*Chatham, N. B	30.11	764.8	30.17	766.3	44	6.7	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island	30.13	765.3	30.17	766.3	54	12.2	86	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	H. J. Cundall, C. E
Cornwall, Ontario	29.43	747.5	29.62	752.3	67.2	19.6	81	NW	.....	.....	3	.....	10s	.....	.....	0.013	0.33	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.17	766.3	43.2	6.2	96	W	.....	.....	1	.....	.....	.....	.....	0.05	1.3	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.69	754.1	29.74	755.4	51.3	10.7	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.52	13.2	Overcast.....	W. H. Bevis.
*Father Point, Quebec	29.99	761.7	30.01	762.2	51	10.6	75	S	6	2.7	.....	2ck	8s	S	S	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.12	765.0	30.19	766.8	45.1	7.3	92	Calm	0	0	.....	.....	Fog	.....	.....	0.33	8.4	Foggy.....	Prof. Harrison.
*Fort Garry, Manitoba	29.54	750.3	30.42	772.7	28	— 2.2	95	S	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	James Stewart.
Granton, Ontario	28.98	736.1	30.08	764.0	50	10.0	80	NW	.....	.....	2	.....	10n	.....	.....	0.53	13.5	Cloudy.....	James Grant.
*Halifax, N. S	30.01	762.2	30.14	765.5	55	12.8	90	NW	2	0.9	.....	0	0	.....	.....	0.009	0.23	Clear.....	F. Allison, M. A.
Hamilton, Ontario	29.72	754.9	30.09	764.3	54.7	12.6	70	SW	.....	.....	3	10cs	0	SW	.....	0	0	Cloudy.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.00	762.0	30.02	762.5	49	9.4	85	NW	.....	.....	1	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.52	749.8	29.85	758.2	61	16.1	92	W	15	6.7	.....	.....	10ks	.....	W	0.03	0.8	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S	30.10	764.5	30.14	765.5	59.3	15.2	80	W	4	1.8	.....	8c	0	W	.....	0.28	7.1	Fair	C. H. Rigby.
*Montreal, Quebec	29.50	751.6	29.79	756.7	60	15.6	87	SE	12	5.4	.....	.....	10n	.....	W	0.01	0.3	Raining.....	C. H. McLeod, C. E
*Parry Sound, Ontario	29.27	743.4	29 96	761.0	49	9.4	78	W	28	12.5	.....	.....	10ks	.....	W	0.25	6.3	Cloudy.....	Rev. R. Mosley.
Peterboro, Ontario	29.20	741.7	29.94	760.5	53.7	12.1	73	W	.....	.....	5	0	7ks	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.39	746.5	30.08	764.0	53	11.7	80	NW	12	5.4	.....	8k	0	NW	.....	0.11	2.8	Fair.....	H. Morgan.
Port Hastings, N. S	30.08	764.0	30.13	765.3	62.6	17.0	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine....	Peter Grant.
Port Stanley, Ontario	29.45	748.0	30.10	764.5	50	10.0	79	W	8	3.6	.....	2k	5ks	W	NW	0.52	13.2	Clearing.....	M. Payne.
*Quebec, Quebec	29.62	752.3	29.94	760.5	52	11.1	79	E	.....	.....	.....	.....	10n	.....	E	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.35	745.5	29.80	756.9	50	10.0	75	W	15	6.7	.....	.....	8s	.....	W	0.10	2.5	Fair...	W. H. McIntyre.
St. Andrews, N. B	30.11	764.8	30.16	766.1	52	11.1	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.08	762.7	30.19	766.8	53	11.7	86	E	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.33	745.0	30.04	763.0	51	10.6	71	NW	30	13.4	.....	.....	10n	.....	NW	0.46	11.7	Cloudy.....	K. Stewart.
Stayner, Ontario	29.25	742.9	30.03	762.7	49	9.4	85	NW	11	4.9	.....	.....	10n	.....	NW	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28 78	731.0	30.07	763.8	49.4	9.7	75	NW	15	6.7	.....	.....	10n	.....	S	0.490	12.60	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.13	765.3	30.16	766.1	58	14.4	83	SW	3	1.3	.....	2c	0	.....	.....	0.20	5.1	Clear.....	T. C. Hill.
*Toronto, Ontario	29.65	753.1	30.03	762.7	54	12.2	63	W	19	8.5	.....	.....	8ks	.....	NW	0.15	3.8	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	43.5	6.4	88	E	.....	.....	.....	0	2s	.....	.....	0.01	0.3	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.75	755.6	29.97	761.2	68	20.0	79	S	12	5.4	.....	2cs	8s	SW	S	0	0	Cloudy	
Alpena, Michigan	29.44	747.8	30.02	764.3	48	8.9	70	NW	21	9.4	...	5k	0	NW	.....	1.48	37.6	Fair	
Atlantic City, New Jersey	30.08	764.0	30.10	764.5	70	21.1	95	SW	10	4.5	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Augusta, Georgia	30.03	762.7	30.21	767.3	73	22.8	90	Calm	0	0	.....	2ck	2ks;fg	SE	Calm;NW	0.06	1.5	Fair	
Baltimore, Maryland	30.04	763.0	30.09	764.3	70	21.1	90	SW	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Barnegat, New Jersey	30.09	764.3	30.11	764.8	70	21.1	90	SW	12	5.4	.....	.....	10ks	.....	SW	Inap.	Inap.	Threatening	
Bismarck, Dakota	28.50	723.9	30.36	771.1	32	0.0	79	E	4	1.8	.....	2cs	0	SW	.....	0	0	Clear	
Boerne, Texas	28.71	729.2	.....	.....	74	23.3	95	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.20	691.0	30.16	766.1	40	4.4	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	65	18.3	94	S	7	3.1	.....	.....	.....	.....	SW;Calm	0	0	Cloudy	
Brackettville, Texas	28.99	736.3	29.98	761.5	79	26.1	74	SE	2	0.9	.....	5cs	0	SE	.....	0	0	Fair	
Breckenridge, Minnesota	29.41	747.0	30.19	774.4	22	—5.6	100	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	30.02	762.5	30.08	764.0	77	25.0	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.32	744.7	30.00	762.0	59	15.0	82	W	18	8.0	.....	.....	10s	.....	W	0.13	3.3	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.66	753.4	29 91	759.7	67	19.4	79	S	19	8.5	.....	5c;k	2s;hz	W	W;Calm	0	0	Fair	
Cairo, Illinois	29.84	757.9	30.23	767.8	57	13.9	75	N	18	8.0	.....	.....	10s	.....	W	0.37	9.4	Cloudy	
Camp Apache, Arizona	.....	.....	.....	.....	53	11.7	54	NE	.....	.....	1	0	1s	.....	Calm	0	0	Fair	
Camp Grant, Arizona	25.26	641.6	30.06	763.5	65	18.3	44	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.30	769.6	50	10.0	45	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camro, California	27.34	694.4	29.91	759.7	38	3.3	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.19	766.8	30.20	767.1	75	23.9	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.12	765.0	30.14	765.5	71	21.7	90	NW	13	5.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.18	766.6	30.20	767.1	78	25.6	82	SE	7	3.1	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Cape May, New Jersey	30.10	764.5	30.12	765.0	72	22.2	90	SW	20	8.9	.....	5c	0	SW	SE	0	0	Fair	
Castroville, Texas	29.32	744.7	30.00	762.0	79	26.1	82	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Charleston, South Carolina	30.16	766.1	30.22	767.6	76	24.4	95	NE	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	31	—0.6	89	Calm	0	0	.....	2cs	0	Calm	NW	0	0	Clear	
Chicago, Illinois	29.58	751.3	30.29	769.4	48	8.9	63	NW	8	3.6	.....	0	5ks	.....	NW	1.04	26.4	Fair	
Cincinnati Ohio	29.57	751 1	30.21	767.3	60	15.6	77	N	12	5.4	.....	1ck	9ks	W	NW	0.58	14.7	Clearing	
Cleveland, Ohio	29.42	747 3	30.14	765.5	57	13.9	69	NW	21	9.4	.....	.....	10ks	.....	S	0.50	12.7	Cloudy	
Coleman City, Texas	28.42	721.9	30.08	764.0	61	16.1	55	N	7	3.1	.....	0	5s	.....	N	0	0	Fair	
Columbus, Ohio	29.32	744.7	30.14	765.5	57	13.9	75	N	10	4.5	.....	.....	10ks	.....	NE	0.13	3.3	Cloudy	
Corpus Christi, Texas	28.30	718.8	29.98	761.5	62	16.7	46	N	8	3.6	.....	0	8s	.....	.....	1.09	27.7	Cloudy	
Corsicana, Texas	29.69	754.1	30.15	765.8	70	21.1	70	N	6	2.7	.....	2cs	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.75	755.6	30.41	772.4	46	7.8	77	N	2	0.9	.....	0	0	.....	.....	0.20	5.1	Clear	
Decatur, Texas	29.07	738.4	30.25	768.3	60	15.6	55	N	18	8.0	.....	4ck	0	SE	N	0	0	Clear	
Denison, Texas	29.43	747.5	30.24	768.1	58	14.4	82	N	8	3.6	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Denver, Colorado	25 62	635.5	30.24	768.1	39	3.9	64	S	4	1.8	.....	0	5s	.....	.....	0	0	Fair	
Des Moines, Iowa	29.54	750.3	30.46	773.7	40	4.4	73	NW	3	1.3	.....	0	0	.....	W	0	0	Clear	
Detroit, Michigan	29.51	749.5	30.18	766.6	50	10.0	65	NW	8	3.6	.....	0	1s	.....	.....	0.96	24.4	Clear	
Dodge City, Kansas	27.77	705.4	30.16	766.1	40	4.4	91	NE	8	3.6	.....	5cs	0	W	Calm	0	0	Fair	
Dubuque, Iowa	29.66	753.4	30.38	771.6	46	7.8	77	N	3	1.3	.....	0	5s	.....	.....	0.24	6.1	Fair	
Duluth, Minnesota	29.74	755.4	30.45	773.4	38	3.3	81	SW	3	1.3	.....	0	0	.....	.....	0.65	16.5	Clear	
Eagle Pass, Texas	29.34	745.2	30.06	763.5	74	23.3	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.10	764.5	30.16	766.1	56	13.3	75	E	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	74	23.3	90	Calm	.....	.....	0	0	0	.....	W	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	72	22.2	42	W	5	2.2	.....	0	5s	.....	Calm	0	0	Fair	
Erie, Pennsylvania	29.37	746.0	30.07	763.8	58	14.4	76	NW	17	7.6	.....	.....	10s	.....	.....	0.29	7.4	Cloudy	
Escanaba, Michigan	29.59	751.6	30.29	768.6	44	6.7	76	NW	12	5.4	.....	0	0	.....	.....	0.06	1.5	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	70	21.1	66	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.67	652.0	29.74	755.4	59	15.0	48	NE	12	5.4	.....	10cs	0	SW	.....	0	0	Cloudy	
Fort Davis, Texas	25.39	644.9	30.35	770.9	64	17.8	68	NE	8	3.6	.....	5k	0	SE	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.74	755.4	30.29	769.4	52	11.1	73	N	6	2.7	.....	2c	0	NW	.....	0	0	Clear	
Fort Griffin, Texas	28.98	736.1	30.26	768.6	59	15.0	54	N	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Fort McKavett, Texas	27.98	710.7	29.88	758.9	66	18.9	64	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.07	738.4	30.20	767.1	53	11.7	61	N	16	7.2	.....	0	8s	.....	N	0	0	Cloudy	
Fredericksburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Galveston, Texas	30.07	763.8	30.11	764.8	80	26.7	87	SE	3	1.3	.....	.....	10s	.....	SE	0.10	2.5	Cloudy	
Graham, Texas	29.14	740.1	30.19	766.8	62	16.7	56	N	6	2.7	.....	5k	0	NW	.....	0	0	Fair	
Grand Haven, Michigan	29.59	751.6	30.24	768.1	53	11.7	67	NE	18	8.0	.....	0	5s	.....	NE	0.21	5.3	Fair	
Indianapolis, Indiana	29.45	748.0	30.23	767.8	55	12.8	74	NW	4	1.8	.....	0	1s	.....	Calm	1.17	29.7	Clear	
Indianola, Texas	30.09	764.3	30.11	764.8	81	27.2	78	E	7	3.1	.....	2k	0	E	.....	0	0	Fair	
Jacksboro, Texas	29.06	738.1	30.19	766.8	60	15.6	88	N	8	3.6	.....	0	5s	.....	NE	0	0	Fair	
Jacksonville, Florida	30.13	765.3	30.16	766.1	78	25.6	86	E	4	1.8	.....	2c	0	Calm	.....	0	0	Clear	
Keokuk, Iowa	29.71	754.6	30.34	770.6	50	10.0	79	N	6	2.7	.....	0	1s	.....	N	0.16	4.1	Clear	
Key West, Florida	29.98	761.5	30.01	762.2	81	27.2	83	NE	14	6.3	.....	2cs	5ks	E	E	0.08	2.0	Fair	
Kittyhawk, North Carolina	30.15	765.8	30.18	766.6	73	22.8	100	SE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.19	741.4	30.17	766.3	65	18.3	89	Calm	0	0	.....	.....	10ks	.....	W	0	0	Cloudy	
La Crosse, Wisconsin	29.63	752.6	30.39	771.9	45	7.2	84	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	65	18.3	53	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Laredo, Texas	29.64	752.8	29.97	761.2	78	25.6	86	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.94	633.5	30.22	767.6	41	5.0	74	SW	12	5.4	.....	0	Haze	.....	Calm	0.02	0.5	Clear	
Leavenworth, Kansas	29.53	750.0	30.40	772.1	46	7.8	77	N	6	2.7	.....	2cs	0	NW	.....	0	0	Fair	
Los Angeles, California	29.63	752.6	29.96	761.0	61	16.1	82	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.65	753.1	30.20	767.1	59	15.0	82	NW	11	4.9	.....	.....	10s	.....	N	0.74	18.8	Cloudy	
Lynchburg, Virginia	29.45	748.0	30.11	764.8	69	20.6	84	Calm	0	0	.....	5cs	2ks	Calm	Calm	0	0	Cloudy	
Marquette, Michigan	29.53	750.0	30.24	768.1	42	5.6	83	W	14	6.3	.....	5k	0	W	.....	0.85	21.6	Fair	
Mason, Texas	28.47	723.1	30.09	764.3	69	20.6	65	NW	1	0.4	.....	.....	10s	.....	NW	0	0	Threatening	
Memphis, Tennessee	29.91	759.7	30.22	767.6	65	18.3	90	N	12	5.4	.....	.....	10s	.....	NW	0.08	2.0	Cloudy	
Milwaukee, Wisconsin	29.57	751.1	30.32	770.1	46	7.8	77	NW	16	7.2	.....	0	1ks	.....	Calm	0.53	13.5	Clear	
Mobile, Alabama	30.12	765.0	30.17	766.3	74	23.3	92	S	4	1.8	.....	2ck	0	Calm	.....	0	0	Fair	
Montgomery, Alabama	29.95	760.7	30.18	766.6	72	22.2	90	NW	4	1.8	.....	.....	10s	.....	Calm	2.05	52.1	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.07	763.8	67	19.4	84	SW	6	2.7	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Mt. Washington, N. H.	23.87	606.3	30.23	767.8	44	6.7	92	W	40	17.9	.....	.....	Fog	.....	W	0	0	Foggy	
Nashville, Tennessee	29.68	753.9	30.21	767.3	67	19.4	84	NE	4	1.8	.....	.....	10s	.....	NE	0.15	3.8	Threatening	
New Haven, Connecticut	29.98	761.7	30.09	764.3	69	20.6	90	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
New London, Connecticut	30.08	764 0	30.13	765.3	68	20.0	95	S	8	3.6	.....	2k	8s	SW	SW	0	0	Cloudy	
New Orleans, Louisiana	30.07	763.8	30.13	765.3	78	25.6	82	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.08	764.0	30.13	765.3	67	19.4	89	S	8	3.6	.....	.....	10cs	.....	SW	0	0	Threatening	
New York, New York	29.92	760.0	30.10	764.5	68	20.0	90	SW	11	4.9	.....	.....	10s	.....	SW	0	0	Threatening	
Norfolk, Virginia	30.12	765.0	30.17	766.3	72	22.2	95	SW	5	2.2	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
North Platte, Nebraska	27.45	697.2	30.14	765.5	38	3.3	86	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.72	754.9	29.76	755.9	53	11.7	93	SE	1	0.4	.....	.....	10n	.....	Calm	0.84	21.3	Heavy rain	
Omaha, Nebraska	29.32	744.7	30.45	773.4	38	3.3	91	NW	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Oswego, New York	29.62	752 3	29.93	760.2	68	20.0	60	NW	17	7.6	.....	.....	10n	.....	W	0.05	1.3	Light rain	
Pembina, Dakota	29.55	750.6	30.44	773.2	22	—5.6	100	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.06	763.5	30.11	764.8	69	20.6	95	SW	10	4.5			10s		SW	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.78	731.0			70	21.1	40	E			1	0	0			0	0	Clear	
Pike's Peak, Colorado	18.00	457.2	30.21	767.3	27	— 2.8	64	SW	12	5.4		2c	8s	Calm	SW	0	0	Cloudy	
Ploche, Nevada	24.11	612.4	29.88	758.9	51.5	10.8	28	NW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.27	743.4	30.06	763.5	63	17.2	83	NW	12	5.4			10a		N	0.02	0.5	Light rain	
Port Huron, Michigan	29.47	748.5	30.14	765.5	51	10.6	65	NW	12	5.4			10ks		NW	0.94	23.9	Cloudy	
Portland, Maine	30.06	763.5	30.11	764.8	60	15.6	94	S	9	4.0			Fog			0	0	Foggy	
Portland, Oregon	29.78	756.4	29.88	758.9	50	10.0	100	SW	1	0.4			Fog		Calm	Inap.	Inap.	Foggy	
Prescott, Arizona	24.84	630.9	30.20	767.1	47	8.3	84	S	7	3.1		0	0			0	0	Clear	
Pilot Point, Texas	29.44	747.8	30.27	768.8	60	15.6	64	N	4	1.8		8k	0	NW		0	0	Cloudy	
Punta Rassa, Florida	30.07	763.8	30.09	764.3	79	26.1	78	NE	12	5.4		5cs	0	Calm		0.06	1.5	Fair	
Red Bluff, California	29.53	750.0	29.88	758.9	58	14.4	42	NW	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.89	759.2	30.11	764.8	75	23.9	90	SE	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.38	746.2	29.98	761.5	59	15.0	88	W	12	5.4			10ks		W	0.04	1.0	Cloudy	
Roseburg, Oregon	29.31	744.5	29.88	758.9	45.5	7.5	76	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.81	757.2	29.89	759.2	55	12.8	68	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.72	754.9	30.31	769.9	50	10.0	79	N	12	5.4		0	0			0.41	10.4	Clear	
St. Marks, Florida	30.14	765.5	30.16	766.1	74	23.3	90	NE	4	1.8		2ck	1s	SW	Calm	0	0	Fair	
St. Paul, Minnesota	29.55	750.6	30.42	772.7	38	3.3	80	NW	2	0.9		0	0			Inap.	Inap.	Clear	
Salt Lake City, Utah	25.71	653.0	30.04	763.0	47.5	8.6	39	Calm	0	0		5c	0	W		0	0	Fair	
San Antonio, Texas	29.44	747.8	30.00	762.0	77	25.0	91	Calm	0	0			10ks		S	0	0	Cloudy	
San Diego, California	29.90	759.4	29.97	761.2	63	17.2	89	Calm	0	0			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.54	750.3	30.21	767.3	54	12.2	67	N	20	8.9		8k	0	N		1.10	27.9	Fair	
Sandy Hook, New Jersey	30.05	763.3	30.08	764.0	70	21.1	90	SW	16	7.2		2k	8ks	SW	SW	0	0	Cloudy	
San Francisco, California	29.86	758.4	29.93	760.2	55	12.8	84	SW	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.48	596.4	30.02	762.5	50	10.0	39	SE	7	3.1		10k	0	S		0	0	Cloudy	
Savannah, Georgia	30.11	764.8	30.20	767.1	75	23.9	95	Calm	0	0			Fog		Calm	0	0	Foggy	
Shreveport, Louisiana	29.93	760.2	30.15	765.8	73	22.8	90	Calm	0	0		0	8s		S	0	0	Fair	
Silver City, New Mexico	24.44	620.8			58	14.4	48	Calm	0	0		5k	0	Calm		0	0	Fair	
Smithville, North Carolina	30.18	766.6	30.22	767.6	74	23.3	95	SE	1	0.4		0	0			0	0	Clear	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	67	19.4	84	S	8	3.6			10s		S	0	0	Cloudy	
Stockton, Texas	27.18	690.4	30.18	766.6	62	16.7	61	NE	12	5.4			10ks		SE	0	0	Cloudy	
Thatcher's Island, Mass	30.07	763.8	30.12	765.0	62	16.7	100	SW	6	2.7		10ck	0	SW		0	0	Cloudy	
Toledo, Ohio	29.52	749.8	30.20	767.1	53	11.7	73	W	6	2.7		0	2s		Calm	0.77	19.6	Clear	
Tucson, Arizona					65	18.3	48	Calm	0	0		0	0			0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	80	26.7	82	E	8	3.6		0	2s		E	0	0	Fair	
Umatilla, Oregon	29.54	750.3			51	10.6	72	SE	4	1.8		Haze	8ks	Calm	W	0	0	Fair	
Unalashka, Aleutian Islands					44	6.7	84	SW			6	0	5s		W	0	0	Fair	
Uvalde, Texas	29.22	742.2	30.02	762.5	76	24.4	82	E	2	0.9		0	0			0	0	Clear	
Vicksburg, Mississippi	29.97	761.2	30.22	767.6	71	21.7	79	SE	4	1.8		5k	0	Calm		0	0	Fair	
Virginia City, Montana	24.34	618.2	29.82	757.4	36	2.2	71	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.57	751.1	29.94	760.5	55	12.8	61	SE	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.99	761.7	30.10	764.5	71	21.7	95	SW	11	4.9			10ks		SW	Inap.	Inap.	Cloudy	
Wickenburg, Arizona					56	13.3	57	N			1	0	0			0	0	Clear	
Wilmington, N. Carolina	30.12	765.0	30.20	767.1	73	22.8	95	Calm	0	0		0	Fog		Calm	0.46	11.7	Clear	
Winnemucca, Nevada	25.68	652.3	30.04	763.0	33	0.6	32	E	8	3.6		0	0			0	0	Clear	
Wood's Holl, Mass	30.09	764.3	30.14	765.5	66	18.9	94	SW	10	4.5			10s		SW	0	0	Cloudy	
Yankton, Dakota	29.17	740.9	30.56	776.2	28	— 2.2	82	Calm	0	0		0	0			0	0	Clear	
Yuma, Arizona	29 67	753.6	29.83	757.7	70	21.1	95	S	1	0.4		0	Haze		Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska																			
York Factory, B. A	30.13	765.3	30.18	766.6	30.0	— 1.1	95	NW	7	3.1		3c	0	NW		0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.97	761.2	29.99	761.7	83	28.3	79	E	2.4	1.1		8c	2ks	Calm	E	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.82	757.4	29.85	758.2	82	27.8	82	NNE			1	8c	4ks		NE	0	0		Robert Mason.
St. Thomas					83	28.3	87	E	4	1.8		4c	8ks	N		0.12	3.0	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.01	762.2	30.02	762.5	81	27.2	95	Calm	0	0		8c	5s	Calm	NE	0.16	4.1		James Gall.
Navassa, W. I	29.75	755.6	29.83	757.7	82.5	28.1		E	8.5	3.8						0.20	5.1	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.99	761.7	29.99	761.7	85	29.4	72	NE			2	5k	6ks			0	0	⅛ cloudy	C. J. Hering
Medellin, Colombia, S. A	25.25	641.3			67.0	19.4	85	Calm	0	0		3cs	5s;ks	E		0.07	1.8		Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,323 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.: Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.28	769.1	77	25.0	77	25.0	91	N	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.05‡	763.3‡	.....	.....	57	13.9	94	NE	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Foggy	
Naval Hospital, Yokohama, Japan.....	29.81*	757.2*	74.2	23.4	71	21.7	85	E	.....	.....	3	.....	10ks	.....	SE	Inap.	Inap.	.....	.....	Cloudy.....	
Adams. S. 45° 00′, W. 127° 01′.....	30.17	766.3	59	15.0	48	8.9	85	Var.	.....	.....	0–1	.....	.....	.....	SSE	0	0	Long	SE	Fair	
Alliance. N. 42° 42′, E. 10° 05′.....	29.82‡	757.4‡	.....	.....	72	22.2	67	WNW	.....	.....	3	.....	3	.....	NW	.....	.....	Light	NW	Hazy.....	
Ashuelot. Yokohama, Japan	29.85	758.2	74	23.3	71	21.7	85	NNW	.....	.....	5	.....	10	.....	NE	.....	.....	Mod'ate	E	Cloudy.....	
Alaska, Talcahuano, Chili	30.15	765.8	57	13.9	54	12.2	80	WSW	.....	.....	1	.....	8	.....	.....	0	0	.....	.....	Misty.....	
Colorado, New York, N. Y.....	30.10‡	764.5‡	.....	.....	69	20.6	90	WSW	10	4.5	.....	.....	8	.....	WSW	0	0	.....	.....	Hazy	
Constitution, Havre, France.....	30.01‡	762.2‡	.....	.....	58	14.4	100	N	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Despatch, Volo, Turkey.....	29.69‡	754.1‡	.....	.....	70	21.1	90	SE	.....	.....	4	.....	10	.....	NE	.....	.....	.....	.....	Rainy.....	
Essex, S. 29° 18′, W. 30° 33′	30.00	762.0	67	19.4	65	18.3	100	E	.....	.....	6	.....	10	.....	E	.....	.....	Long	E	Cloudy	
Franklin, Norfolk, Va.....	30.27	768.8	73	22.8	72	22.2	100	SW	3.6	1.6	.....	.....	10	.....	SW	0.03	0.8	.....	.....	Overcast.....	
Gettysburg Gibraltar.....	29.95‡	760.7‡	.....	.....	71	21.7	??	SW	.....	.....	2	.....	1	.....	Calm	0	0	Smooth	.....	Light mist..	
Guard, Bahia, Brazil.....	30.12	765.0	78	25.6	77	25.0	82	NNW	.....	.....	2	.....	2	.....	NNW	.....	.....	.....	.....	Fair.....	
Hartford, Rio de Janeiro, Brazil ...	30.00	762.0	.....	.....	71	21.7	90	N	6.0	2.7	.....	.....	10	.....	.....	0.06	1.5	.....	.....	Rainy.....	
Marion, Naples, Italy.....	29.60	751.8	70	21.1	71	21.7	62	W	.....	.....	3	.....	2	.....	Calm	0	0	.....	.....	Fair	
Michigan, Erie, Pa.....	29.98†	761.5†	.....	.....	58	14.4	82	W	.....	.....	7	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy. Yokohama, Japan	29.82‡	757.4‡	.....	.....	71	21.7	100	NNE	.....	.....	1–2	.....	10	.....	NNE	.....	.....	.....	.....	Showery	
New Hampshire, Port Royal, S. C.....	30.41†	772.4†	.....	.....	76	24.4	91	E	9	4.0	.....	.....	2	.....	SSE	0	0	.....	.....	Fair	
Onward, Callao, Peru.....	30.14†	765.5†	.....	.....	63	17.2	93	S	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	30.22	767.6	72	22.2	72	22.2	95	S	.....	.....	2	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Palos, Tientsin, China.....	30.13	765.3	64	17.8	62	16.7	94	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. S. 40° 48′, W. 70° 59′.....	30.25	768.3	69	20.6	69	20.6	95	S	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	S;W	Cloudy.....	
Powhatan, N. 40° 45′, W. 69° 30′.....	30.18‡	766.6‡	.....	.....	66	18.9	95	ESE	2.4	1.1	.....	.....	5	.....	.....	.....	.....	Smooth	SE	Clear.....	
Ranger. Hong-Kong, China.....	29.95	760.7	85	29.4	85	29.4	87	SSW	.....	.....	2–3	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	30.02	762.5	78	25.6	78	25.6	95	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md...	30.08‡	764.0‡	.....	.....	70	21.1	95	SW	.....	.....	1	.....	10	.....	SW	0	0	.....	.....	Cloudy	
Saratoga, League Island, Pa	30.05*	763.3*	.....	.....	69	20.6	95	SW	.....	.....	2	.....	10	.....	NE	Slight	Slight	.....	.....	Cloudy	
St. Louis, League Island, Pa	30.03	762.7	72	22.2	69	20.6	90	SW	12	5.4	.....	.....	10	.....	SW	0.03	0.8	.....	.....	Cloudy	
Supply, Havre, France.....	30.06	763.5	60	15.6	60	15.6	60	NE	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.....	30.11‡	764.8‡	.....	.....	65	18.3	94	S	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Trenton, N. 50° 14′, W. 2° 52′.....	30.03‡	762.7‡	.....	.....	58	14.4	64	NW	.....	.....	4	.....	8	.....	W	0	0	Mod'ate	W	Fair.....	
Tuscarora, La Paz, Mexico.....	29.73	755.1	81	27.2	81	27.2	78	E	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia, Barcelona, Spain	29.90‡	759.4‡	.....	.....	75	23.9	64	S	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	30.24‡?	768.1‡?	.....	.....	65	18.3	89	SW	4	1.8	.....	.....	10	.....	Calm	0	0	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Upper	Lower	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From -	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama, Tacoma, W. T.		29.51*	749.5*				SE			3		10						Rainy	Capt. Cavarly.
S. S City of Peking																			Capt. Dearborn.
S. S. City of Sydney																			Capt. Maury.
S. S. City of Tokio																			Capt. Searle.
S. S. Colima, N. 17° 34', W. 101° 50'		29.98†	761.5†	84	28.9	100	ESE			3		9		Calm	Blank	Small	S	Misty	Capt. Whitebury.
S. S. Costa Rica																			Capt. Morse.
S. S. Dakota																			Capt. Connolly.
S. S. Georgia																			Capt. Austin.
S. S. Grenada																			Capt. A. Fuller.
S. S. Wilmington																			Capt. Ghest.
S. S. Zelandia																			

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 41° 55', E. 167° 59'		29.85*	758.2*	59	15.0	70	NE			1		8		E		Mod'ate	NW	D. clouds	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		29.95†	760.7†				E			3		8			Blank			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 54', W. 168° 10'		30.31	769.9	69	20.6	100	SSW			3		8		W		1		D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 52° 0', E. 2° 45'		29.89	759.2	57.0	13.9	69	W			5		5		NW	2 hours	3–4	W	Fine	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				59	15.0	??	WNW			2		10		WNW	0			Cloudy	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.22?	767.6?	70	21.1	90	W			1		5		W	0			Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 42° 55′ W. 58° 32′		30.22*	767.6*				N	5	2.2			0				Slight	NW	Clear	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 19° 07′, W. 65° 36′		29.93	760.2	84	28.9	83	ESE	10	4.5			8k		E	0.08 in or 2.0 mm.	Swell	NE	Cloudy	Capt. James Jorgen sen.
Schooner Florence, Off St. John's, N. B.		30.17*	766.3*				W			3	6	11ks		W	0			Clear	O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4. *Aneroid.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 27, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.00	762.1	68.2	20.1	85	NE			3		1			0	0	Very fair	Dr. Ollive.
Nemours			30.01	762.2	77.2	25.1	83	NNW			1		1			0	0	Very fair	Kesxuche.
Algiers			29.97	761.1	78.1	25.6	60	ENE			1		0			0	0	Clear	Tourillere.
La Calle			29.99	761.8	75.7	24.3	67	NW			5		5			0	0	Cloudy	Foufrede.
Tunis			29.91	759.8	77.2	25.1	60	W			5		3			0	0	Pretty fair.	Jacques.
Sfax			30.06	763.5	84.2	29.0		W			5		2			0	0	Fair	Gau.
Saida			30.02	762.4	78.8	26.0	24	N			1		2			0	0	Fair	Herbin.
Tebessa			29.98	761.6	74.7	23.7	17	NNW			6		2			0	0	Fair	Watrin.
Geriville			29.97	761.3	83.8	28.8	49	Calm			0		0			0	0	Clear	Brugniaux.
Laghouat			30.09	764.2	78.1	25.6	36	Calm			0		1			0	0	Very fair	Bertrand.
Biskra			30.04	763.1	87.1	30.6	31	NNW			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.18	741.1	29.72	754.8	59.7	15.4	75	NE			6		10			0.055	1.4	Raining	Prof. Ivan Stozir.
Ornecow, I. R. Observatory	29.12	739.7	29.89	759.2	54.9	12.7	95	NNW			1		10			0.906	23.0		Dr. Wierzbiski
Eperies	28.89	733.7	29.74	755.4	63.3	17.4	86	N			1		10s		S	0	0		Julius Mikolik.
Gratz	28.62	726.9	29.84	758.0	61.3	16.3	60	NW			6		10			0.041	1.05		Andreas Rospini.
Hermannstadt	28.19	715.9	29.60	751.7	72.7	22.6	57	S			3		1			0.148	3.75		Prof. A. Gottschling.
Kremtmünster	28.69	728.8	30.03	762.7	55.0	12.8	89	W			2		7			0.433	11.1		Prof. C. Wagner
Lemberg	28.78	730.9	29.73	755.2	65.1	18.4	82	SE			2		10			0.886	22.5		Dr. T. Stanecki.
Pola	29.63	752.5	29.73	755.2	67.1	19.5	77	NW			1		10s			0.079	2.0		I.R.Hydrographic Office
Szathmar	29.23	742.5	29.67	753.7	74.1	23.4	62	NW			3		8			0.433	11.0	Thunder-storm	Julius Csics, S. J.
Szegedin	29.37	745.9	29.64	752.8	65.5	18.6	73	S			1		8			0.713	18.10		Karl Stancel.
Trieste	29.71	754.5	29.81	757.1	67.8	19.9	86	Calm			0		10?			0	0	½ clear?	P. Busin.
Vienna	29.24	742.7	29.96	760.9	53.6	12.0	91	NW			4		10			0.539	13.7		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünstor, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.65	727.6	30.15	765.9	53.8	12.1	62	ESE			0		9			0	0		Prof. M. Passau.
Brussels	29.91	759.8	30.11	764.9	58.6	14.8	60	WSW			4		2		WNW	0	0		Royal Observatory
Furnes	30.12	765.1	30.15	765.7	61.7	16.5	62	SW			3		6			0	0		M. E. de Cae
Maeseyck	30.00	762.0	30.13	765.3	58.5	14.7	64	WSW			4		8			0.012	3.		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S, E., Secretary of the Scottish Meteorological Society. Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.76	755.9	29.86	758.4	55.9	13.3	.....	W	30	13.4	.....	.....	2	.....	.....	0	0	Blue sky.....	W. Boswell.
Ardrossan	29.94	760.5	29.95	760.7	58	14.4	.....	WNW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	30.02	762.5	57.4	14.1	.....	WSW	2	0.9	.....	.....	10	.....	.....	.....	.....	Overcast.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.00	762.0	56.8	13.8	.....	W	17	7.6	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.59	751.6	29.99	761.7	57.1	13.9	.....	W	.....	.....	2	.....	10	.....	.....	0.11	2.8	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	84	28.9	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.04	763.0	58.5	14.7	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	30.05	763.3	62.6	17.0	.....	NW	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.95	760.7	30.08	764.0	61.2	16.2	.....	SW	.....	.....	3	.....	9	.....	.....	.....	.....	Overcast.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.66	728.0	30.14	765.5	52.0	11.1	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy.....	Alexander Watt.
Donaghadee	29.66	761.0	29.99	761.7	58	14.4	.....	WNW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	30.06	763.5	30.08	764.0	63	17.2	.....	W	.....	.....	3	.....	3	.....	.....	.....	.....	¾ clouded...	J. Costello.
Eccles, (near Manchester)	.....	.....	30.10	764.5	57.0	13.9	.....	WSW	0.6	0.3	.....	.....	10	.....	.....	.....	.....	Threatening	Thomas Mackereth.
Falmouth, Observatory	29.95	760.7	30.18	766.6	60.8	16.0	.....	WSW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.74	755.4	29.97	761.2	79.5	26.4	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Raining.....	
Galway, Queen's College	.....	.....	30.00	762.0	60	15.6	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.91	759.7	29.96	761.0	.....	.....	.....	E	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.74	755.4	29.94	760.5	55.9	13.3	.....	W	.....	.....	6	.....	3	.....	.....	.....	.....	D. clouds.....	D. G. Maclean.
Great Yarmouth	30.04	763.0	30.04	763.0	56	13.3	.....	WSW	.....	.....	3	.....	4	.....	.....	.....	.....	Drizzling.....	G. T. Watson.
Greenwich, Royal Obs'y	29.92	760.0	30.03	764.3	58.9	14.9	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	The Staff, for G. B. Airy.
Guernsey	29.97	761.2	30.19	766.8	61.5	16.4	.....	WSW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.23	767.8	62	16.7	.....	SW	.....	.....	0	.....	6k	.....	.....	0	0	Gloomy.....	M. P. Moyle.
Holyhead	29.98	761.5	30.03	762.7	62	16.7	.....	WSW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.94	760.5	30.23	767.8	60.3	15.7	.....	W	.....	.....	3	.....	9	.....	.....	.....	.....	.....	J. Fisher.
Kew, Observatory	30.06	763.5	30.09	764.3	58.0	14.4	.....	SW	8	3.6	.....	.....	10	.....	.....	.....	.....	Drizzling.....	The Staff.
Kingstown	30.00	762.0	30.03	762.7	62	16.7	.....	WNW	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	30.02	762.5	61.3	16.3	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.78	756.4	29.85	758.2	75	23.9	.....	NW	.....	.....	2	.....	2k	.....	.....	.....	.....	D. clouds.....	Sergt. Beckett.
Nairn	29.80	756.9	29.89	759.2	55	12.8	.....	NW	.....	.....	3	.....	8	.....	.....	.....	.....	¾ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.94	760.5	83.0	28.3	.....	NE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.82	757.4	30.00	762.0	62.7	17.1	.....	SW	.....	.....	2	.....	10k;d	.....	W	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.49	749.0	30.01	762.2	61.2	16.2	.....	SW	.....	.....	3	.....	10	.....	.....	Blank	Blank	Threatening	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.07	763.8	60	15.6	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Plymouth	30.09	764.3	30.16	766.1	59.8	15.4	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	30.04	763.0	30.08	764.0	64	17.8	.....	W	.....	.....	3	.....	8	.....	.....	.....	.....	Misty.....	W. Kennedy.
Saint Ann's Head	29.93	760.2	30.09	764.3	60	15.6	.....	W	.....	.....	5	.....	7	.....	.....	.....	.....	Misty.....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.82	757.4	52.8	11.6	.....	NW	27	12.1	.....	.....	10	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.71	754.6	75.2	24.0	.....	Calm	.....	.....	0	.....	9	.....	.....	Blank	Blank	Gloomy.....	Sergt. W. H. Lyne.
Sheffield	29.72	754.9	29.99	761.7	62.4	16.9	.....	SW	.....	.....	4	.....	3	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth, Rectory	29.94	760.5	29.97	761.2	62.1	16.7	78	SW	.....	.....	1	.....	4	.....	.....	0.055	1.40	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.61	752.1	30.01	762.2	64.9	12.7	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.88	758.9	30.10	764.5	60.8	16.0	.....	W	.....	.....	2	.....	10	.....	.....	.....	.....	Squally.....	Rev. C.H. Griffith, F.M.S
Thurso	.....	.....	29.83	757.7	54	12.2	.....	WNW	.....	.....	4	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.16	766.1	64	17.8	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	30.07	763.8	30.10	764.5	59.1	15.1	.....	WSW	19	8.5	.....	.....	10	.....	.....	.....	.....	Misty.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.72	754.9	42.0	5.6	75	SW	.....	.....	5	.....	4k	.....	.....	0.03	0.8	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.97	761.2	30.16	766.1	74.4	23.6	67	ESE	19.5	8.7	.....	0	7	.....	ESE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	763.0	45.0	7.2	80	W	11	4.9	.....	.....	3	.....	.....	0.06	1.5	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 20', W. 49° 15'	WNW	.....	.....	4	.....	4	SE	.....	3	WNW	Squally.....	Capt. W. Waring.
Barque Margaret Smith, N. 21° 15', W. 42° 10'	.....	.....	.....	2	.....	5	.....	.....	.....	E	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 43° 45', W 37° 50'	W	.....	.....	6	.....	8	.....	.....	5	W	Showery.....	Capt. Alex Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.
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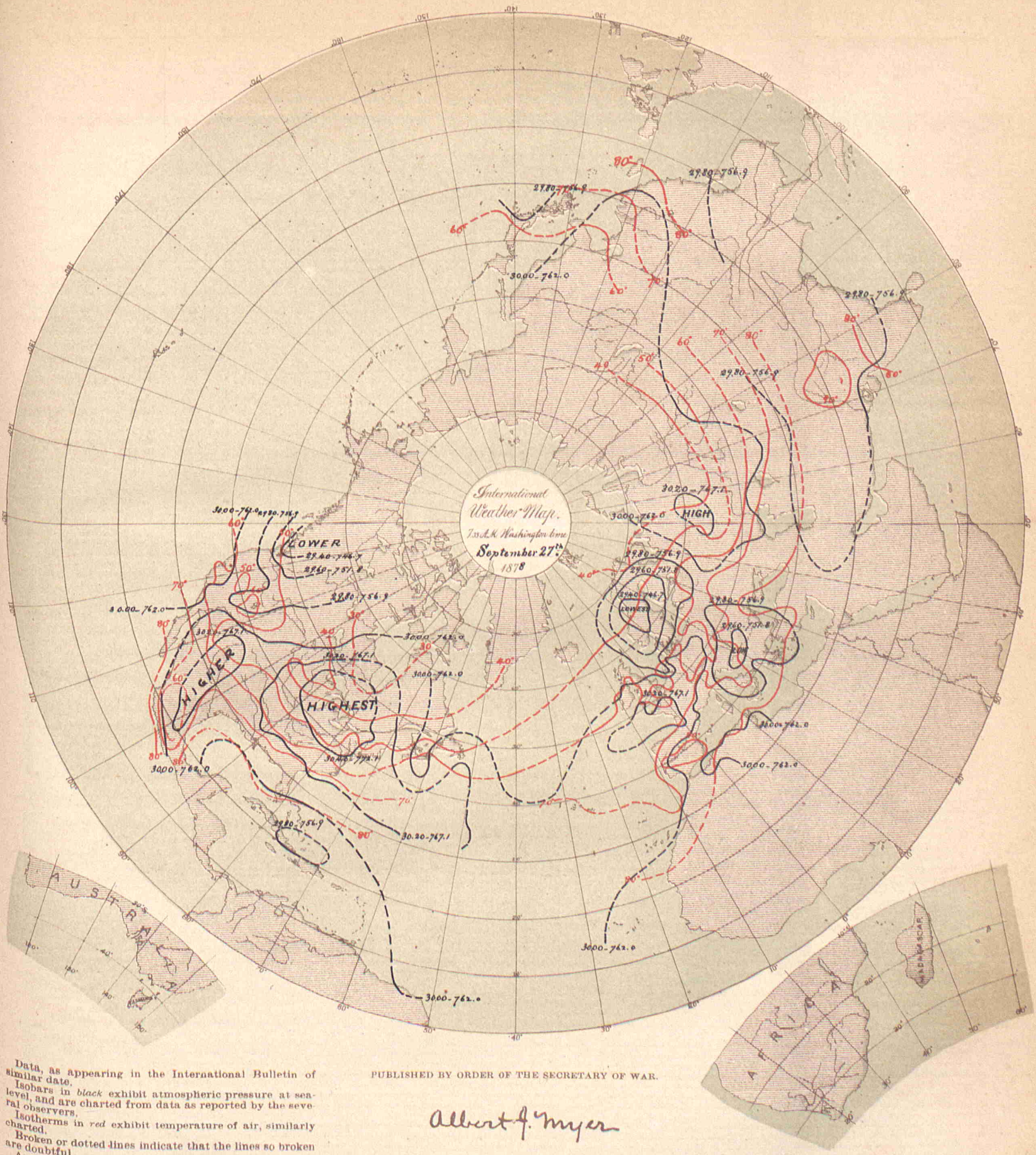
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	67.1	19.5	95	Calm	.....	.....	0	3ck	p	.....	.....	0.2	5.	.....	Mr. Ansart.
San José	26.23	666.2	.....	.....															Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.71	754.6	29.76	755.8	56.3	13.5	66	WSW	.....	.....	4	.....	6	.....	.....	.....	.....	.....	.....
Fanöe	29.75	755.6	29.77	756.1	55.2	12.9	74	W	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.84	758.0	29.88	758.9	50.5	10.3	77	N	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....
Vestervig	29.42	747.2	29.59	751.5	53.2	11.8	94	W	.....	.....	7	.....	8	.....	.....	.....	.....	Raining	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.71	754.7	30.26	768.7	58.6	14.8	72	N	.....	.....	1	.....	10	.....	.....	.....	.....	Covered	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.85	758.3	29.93	760.3	71.6	22	45	N	.....	.....	4	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.61	752.1	30.16	766.1	61.7	16.5	85	NE	.....	.....	2	5c	.....	.....	NE	0	0	Cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.91	759.8	30.20	767.0	61.2	16.2	56	NW	.....	.....	2	.....	5	.....	NW	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.25	743.0	30.14	765.5	61.0	16.1	70	NE	.....	.....	2	.....	5	.....	N	Inap.	Inap.	Cloudy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourgde, Normal School	29.64	752.8	30.19	766.8	69.9	15.5	76	NW	.....	.....	1	.....	2k	.....	NNW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.95	760.7	30.19	766.9	68.7	20.4	64	SW	.....	.....	1	.....	1	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.66	753.3	30.06	763.4	73.4	23	45	W	.....	.....	4	.....	5	.....	E	E	0	0	Cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.47	748.5	30.02	762.6	76.5	24.7	65	N	.....	.....	2	.....	10	.....	SE	SE	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.83	757.7	30.15	765.7	58.6	14.8	74	NW	.....	.....	1	.....	8	.....	.....	.....	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.79	731.3	30.13	765.3	60.6	15.9	67	N	.....	.....	1	.....	10	.....	.....	NW	0.039	1.0	Covered	Allnard, Director.
Commercy, Normal School	29.31	744.5	30.19	766.8	56.1	13.4	90	NW	.....	.....	1	2c	.....	NW	.....	.....	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.82	731.9	29.96	760.9	75.2	24.0	28	N	.....	.....	1	.....	0	.....	.....	.....	0	0	Clear	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.93	760.3	30.24	768.1	58.1	14.5	60	NE	.....	.....	1	.....	5	.....	NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.21	742.0	30.12	765.0	62.6	17	80	NE	.....	.....	6	.....	5	.....	NE	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.15	765.7	30.18	766.6	65.1	18.4	54	N	.....	.....	1	.....	5	N	.....	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	29.10	739.1	30.14	765.6	57.2	14	78	W	.....	.....	1	.....	5ck	.....	N	0.04	1.	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.84	757.9	29.90	759.4	75.9	24.4	71	N	.....	.....	6	.....	0	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.62	737.2	30.07	763.7	66.2	19	51	NW	.....	.....	1	.....	k	NW	NW	0	0	.....	M. Cantier.
Puy de Dome (Summit)	25.27	641.9	.....	.....	41.0	5.0	100	NE	.....	.....	1	.....	8	.....	.....	0.106	2.7	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	30.18	766.5	30.21	767.3	65.5	18.6	66	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.10	764.5	30.19	766.7	61.5	16.4	57	NW	.....	.....	1	.....	8	.....	W	0	0	Very cloudy	P. Lucard, Director.
Saint Malo (Port)	.....	.....	30.22	767.5	62.4	16.9	60	NNW	.....	.....	2	.....	1	.....	N	0	0	Clear	M. H. Hereouet.
Saint Maur, (near Paris)	30.02	762.5	30.19	766.7	59.9	15.5	54	WNW	.....	.....	0-1	.....	5	.....	NNW	0	0	Fair	E. Renou.
Tarbes, Normal School	29.13	739.9	30.23	767.9	62.6	17	80	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.85	758.1	29.87	758.8	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchési.
Lyons	.....	.....	30.11	764.9	62.4	16.9	64	.....	.....	.....	.....	.....	4	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.89	759.2	77.0	25.0	86	W	.....	.....	2-3	.....	1	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.95	633.6	30.26	768.6	63.0	17.2	19	N	.....	.....	3	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.84	757.8	71.1	21.7	76	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.90	759.5	30.18	766.5	60.3	15.7	54	NW	.....	.....	2	.....	6	.....	NNW	Inap.	Inap.	.....	Marié Davy, Director
Perpignan	.....	.....	30.02	762.6	74.8	23.8	47	N	22.4	10.00	.....	.....	1	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.67	575.7	.....	.....	53.6	12.0	.....	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.44	747.7	30.16	766.1	67.6	19.8	49	NW	.....	.....	2	.....	3	.....	.....	0	0	.....	The Staff.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Marquet.
Versailles	.....	.....	30.20	767.0	60.4	15.8	49	N	.....	.....	1	.....	9	.....	.....	0.004	0.09	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	763.1	30.07	763.8	65.8	18.8	86	NNE	2.7	1.2	.....	.....	6k	.....	.....	0.177	4.5	Cloudy	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.15	740.3	29.99	761.7	57.4	14.1	56	W			5		3	W		0	0		Prof. Dr. Hoh.
Berlin	29.82	757.4	29.99	761.7	60.8	16.0	49	SW			2		3			0	0		Prof. Arndt.
Breslau	29.48	748.9	30.02	762.4	57.2	14.0	60	NW			2		7			0.159	4.04		Royal University Obs'y
Carlsruhe	29.70	754.3	30.12	765.1	60.8	16.0	81	W			1		1			0	0		Albert Senz.
Cassel	29.46	748.2	30.07	763.7	62.2	16.8	50	WNW			4		5	W		0	0		Dr. H. Möhl.
Crefeld	29.90	759.5	30.07	763.6	61.3	16.3	58	W			3		7k			0	0		Director Lose.
Emden	29.99	761.7	30.02	762.6	60.1	15.6	73	WSW			4		6			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.7	30.11	764.9	60.8	16		W			2		7			0	0		Physical Society.
Friedrichshafen	28.68	728.5	30.11	764.7	58.6	14.8	83	SSW			2		2	SW		0	0		M. Wilhelm.
Hamburg	29.86	758.4	29.93	760.2	56.8	13.8	80	W			3		5k;n			0.059	1.5	Showery	Captain F. Hegemann.
Kiel	29.85	758.1	29.86	758.5	57 0	13.9	68	WSW			5		6			0.057	1.44		Prof. G. Karsten.
Königsberg, (Prussia)	29.79	756.7	29.87	758.8	58.1	14.5	59	NW			2		2			0.102	2.6		Prof. E Luther.
Köslin			29.87	758.8	59.0	15.0		SW			2		2			0	0		H. Müller.
Leipsic, Observatory	29.63	752.7	30.05	763.3	60.1	15.6	44	SW			3		3	W		0	0		Prof. Bruhns.
Memel, Naval School	29.82	757.5	29.87	758.7	57.9	14.4	59	W			3		1ck					Clear.	Reinbrecht and Skalweit.
Neufahrwasser	29.89	759.2	29.91	759.6	61.2	16.2	50	W			3		4			6	0		A. Lothes.
Posen	29.72	754.8	30.00	762.1	58.6	14.8	36	WNW			5		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.79	751.6	30.13	765.4	61.9	16.6	67	ENE			2		9	SW		0.008	0.16		Astronomical Observatory.
Stuttgart	29.13	739.8	30.06	763.4	61.7	16.5	65	N			1		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.57	751.0	30.09	764.3	60.4	15.8	50	W			2		8			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.58	726.0	30.07	763.8	58.8	14.9	59	W	2.5	1.1			7ck		NW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.87	758.8	29.91	759.8	56.5	13.6	77	SW			4		10			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the coöperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.36	745.8	29.74	755.4	78.1	25.6		SW			2.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.75	755.5	29.80	756.8	86.9	29.6	63	WSW	24?	10.77			0			0	0	Blue sky	
Deesa	29.33	745.1	29.80	756.9	90.3	32.4	52	Calm					0			0	0	Blue sky	
Bombay	29.77	756.1	29.81	757.1	81.7	27.6	89	NW	10	4.5			10	SW	WSW	1.20	30.5	Overcast	
Poona	27.79	705.0	29.80	756.8	75.6	24.2	84	W					10		W	0.84	21.3	Drizzling	
Lahore	28.95	735.4	29.68	753.7	92.6	33.7	37	NE	0.2	0.1			0			0	0	Misty	
Belgaum	27.28	693.0	29.84	757.8	72.1	22.3	93	W	12	5.4			10		NW	0.75	19.0	Showery	
Roorkee	28.81	731.8	29.70	754.2	86.6	30.4	57	Calm	2	0.9			0			0	0		
Agra	29.15	740.5	29.70	754.5	91.7	33.2	40	N								0	0		
Nagpur	28.68	728.6	29.71	754.7	85.1	29.5	68	Calm	2.9	1.3			8		NE	0	0	Gloomy	
Lucknow																			
Allahabad	29.37	746.1	29.68	753.9	84.4	29.1	80	Calm	1.3	0.6			4		N	0	0	D. clouds	
Patna	29.54	750.2	29.72	754.8	83.1	28.4	89	E	1.2	0.5			10	E	E	0.32	8.1	Thunder storm	
Hazaribagh	27.72	704.0	29.71	754.7	79.8	26.6	74	E	4.8	2.2			8					Thunder-storm	
Cuttack	29.66	753.4	29.74	755.4	82.0	27.8	83	Calm	0.8	0.4			6			0.08	2.0	Drizzling	
Calcutta (Alipore)	29.72	755.0	29.74	755.5	79.7	26.5	93	E	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.38	746.3	29.77	756.1	79.8	26.6	90	WSW	3.3	1.5			6			0	0	D. clouds	
Chittagong	29.68	754.0	29.78	756.3	81.4	27.4	93	Calm	2.0	0.9			8			0	0	Misty	
Sibsagar	29.40	746.6	29.73	755.0	85.2	29.6	80	ENE	1.3	0.6			8	W	W	0	0	D. clouds	
Jubbulpore	28.39	721.1	29.74	755.4	85.8	29.9	50	NNE	1.6	0.7			4			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. It is probable that the actual velocity of wind for past hour, and not rate at moment of observation is given, which would account for velocity given, when Calm occurs in wind column.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches..	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.40	746.8	29.80	757.0	69.8	21.0	55	SW	0.7	0.3	.....	.....	6	.....	.....	0.091	2.3	.....	Prof. Giovanni Clodig.
Padua	29.69	754 0	29.79	756.7	73.6	23.1	44	W	7.4	3.3	.....	.....	0	.....	.....	0.047	1.2	.....	Prof. Dott. Lorenzoni
Vicenza	29.64	752.8	29.82	757.5	74.1	23.4	55	SW	3.1	1.4	.....	.....	1	.....	.....	0.087	2.2	.....	Cont. Alm. Da Schio.
Bergamo	28.52	724.5	29.81	757.1	72.0	22.2	61	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.32	744.7	29.82	757.3	66.7	19.3	68	NW	.....	.....	2	.....	1	N	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.95	735.4	29.84	757.9	70.2	21.2	53	SW	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.99	710.2	29.84	757.8	68.4	20.2	47	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.63	752.6	29.85	758.1	73.0	22.8	61	SW	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.63	753.2	29.82	757.4	78.6	25.9	30	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.63	750.0	29.84	757.9	71.6	22.0	54	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.58	750.0	29.82	757.3	75.2	24.0	39	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.75	755.6	29.83	757.7	69.6	20.9	63	W	2.5	1.1	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.34	719.9	29.87	758.6	61.6	16.6	70	N	.....	.....	1	.....	5	.....	.....	1.371	34.8	.....	Prof. P. Serpieri
Rome	29.58	751.4	29.76	755.8	75.4	24.1	44	N	13.0	5.8	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.53	750.1	29.73	755.1	76.1	24.5	55	SE	.....	.....	1	.....	7	NNE	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.48	748.7	29.72	755.0	68.0	20.0	72	SE	4.9	2.2	.....	.....	8	.....	.....	0.051	1.3	.....	Prof. C. De Giorgi
Cagliari	29.06	753.3	29.85	758.1	74.5	23.6	52	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	28.89	733.7	29.79	756.7	62.4	16.9	77	NE	.....	.....	1	.....	9	.....	.....	0.331	8.4	.....	Prof. F. D. Conti.
Palermo	29.55	750.5	29.79	756.7	74.1	23.4	48	WNW	11.9	5.3	.....	.....	8	WNW	.....	0.051	1.3	.....	Prof. G. Cacciatore.
Syracuse	29.69	754.2	29.77	756.1	76.1	24.5	57	W	3.8	1.7	.....	.....	8	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.22	742.2	29.78	756.3	71.2	21.8	62	NNE	4.0	1.8	.....	.....	4	E	.....	0.256	6.5	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.72	754 9	29.92	759.9	66.9	19.4	77	ENE	3.7	1.6	.....	.....	0	.....	.....	0.065	1.65	Very clear..	I. Arai, Director.
Tokei (Yeddo) Observatory	29.76	755.9	29.83	757.7	57.9	14.4	91	NE	8.7	3.9	.....	.....	1s	.....	.....	0.040	1.02	Fair	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.3	18.5	70	W	.....	.....	3	8ck	2s	SE	.....	0	0	Very cloudy	P. Ceballos.
Guadalajara	25.14	638.4	30.12	765.2	54.5	12.5	68	SE	.....	.....	2	3c	0	Calm	.....	0.024	0.6	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.50	622.4	30.07	763.8	59.9	15.5	80	NE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.19	589.0	30.21	767.2	55.8	13.2	88	NW	2.2	1.0	.....	0	10k	.....	NE	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	58.8	14.9	79	NNW	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.40	594.3	30.06	763.5	57.2	14.0	81	NW	4.1	1.8	.....	5ck	5as	Calm	Calm	0	0	Cloudy	Prof. B. Gonzalez.
Tlacotalpam	29.97	761.2	29.98	761.6	74.5	23.6	96	WNW	.....	.....	2	0	10n	.....	NW	1.509	38.3	Rainy	M. M. Cházaro.
San Luis Potosi	24.28	616.1	30.23	767.8	59.0	15.0	73	E	.....	.....	0	0	10	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	30.05	763.2	30.08	763.9	78.8	26.0	87	NW	2.9	1.3	.....	2ck	7ks	.....	E	1.969	50.0	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	57.2	14.0	78	NE	.....	.....	2	7	3	SW	NE	0	0	Covered	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.39	594.3	30.15	766.0	55.4	13.0	85	NW	2.1	1.2	.....	1	6	E	E	0	0	Misty	Prof. P. Spina, [M.M. D. D
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.37	720.5	29.99	761.8	77.9	25.5	82	E	0.8	0.4	.....	0	2	.....	E	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.12	765.0	30.12	765.0	61.5	16.4	.....	WSW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.93	760.1	29.98	761.5	57.0	13.9	.....	W	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Helder	29.99	761.8	29.99	761.8	59.2	15.1	.....	WSW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.07	763.6	30.07	763.6	59.9	15.5	72	W	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.63	752.6	29.68	753.8	61.2	16.2	68	WSW	.....	.....	4	.....	5	.....	.....	0.004	0.1	Cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.37	746.0	29.43	747.4	51.4	10.8	90	SSE	11.0	4.9	.....	.....	4	.....	.....	0.24	6.0	Raining	
Brönö	29.34	745.1	29.37	746.1	46.0	7.8	59	ENE	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.24	742.7	29.38	740.3	55.4	13.0	62	SSW	11	5	.....	.....	8	.....	.....	0.610	15.5	.....	
Tromsö	29.79	756.7	29.84	757.8	44.6	7.0	52	NE	29	13	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h..4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.93	760.1	30.11	764.9	71.6	22.0	81	SW	2.5	1.1	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.5	29.98	761.5	81.1	27.3	30	WNW	2.5	1.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.01	762.3	30.10	764.5	75.0	23.9	57	SW	11.9	5.3	.....	.....	5	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.4	30.02	762.4	70.9	21.6	55	N	13.7	6.1	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.09	764.2	30.16	766.0	70.5	21.4	73	S	11.2	5.0	.....	.....	2	.....	.....	0.098	2.5	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.89	759.3	79.7	26.5	.....	W	.....	.....	2	.....	1	.....	W	1	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, Mossamedes, Lower Guinea	.....	.....	30.02	762.5	74.7	23.7	.....	WNW	.....	.....	3	.....	10	.....	WNW	3	W	D. Clouds ...	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54', W. 23° 47'	.....	.....	29.93	760.1	86.4	30.2	.....	WSW	.....	.....	2	.....	3	.....	WSW	1	WSW	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10', E. 113° 32'	.....	.....	29.89	759.2	86.0	30.0	.....	E	.....	.....	3	.....	3	.....	E	2	SE	D. clouds.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.89	759.1	58.8	14.9	75	N	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.42	747.2	29.83	757.7	57.4	14.1	86	NW	7	3	.....	.....	10	.....	.....	.....	.....	Heavy clouds. .	Astronomical Obs.
Dorpat	29.53	750.0	29.77	756.1	56.7	13.7	95	WSW	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.67	753.7	29.69	754.1	58.5	14.7	96	SSW	9	4	.....	.....	10n	.....	.....	.....	.....	'Light rain...	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kief	29.24	742.8	29.65	758.1	74.1	23.4	30	ESE	18	8	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.82	757 3	29.89	759.1	80.2	26.8	38	SE	45	20	.....	.....	8cs	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.92	760.0	29.94	760.5	76.6	24.7	51	NE	11	5	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.55	750.5	30.08	764.1	65.5	18.6	52	S	9	4	.....	.....	4ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.69	754.0	29.88	759.0	71.6	22.0	30	ENE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs
Archangel	29.93	760.3	29.95	760.8	44.4	6.9	81	ESE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.53	724.6	29.58	758.9	76.6	24.8	48	Calm	0	0	.....	.....	4k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.10	764.6	30.02	762.5	72.3	22.4	33	NE	13	6	.....	.....	0	.....	.....	.....	.....	Dust-haze...	Capt. Wisganow.
Krotkowo*	29.67	753.5	30.14	765.5	48.4	9.1	52	E	7	3	.....	.....	6cs	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.98	761.5	30.26	768.5	50.4	10.2	53	SW	2	1	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.17	740 9	30.15	765.8	33.6	0.9	68	NW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.63	752.7	29.80	758.5	72.1	22.3	62	ENE	27	12	.....	.....	10ks	.....	.....	.....	.....	.....	
Tashkend	28.32	719.3	29.98	761.4	68.0	20.0	79	Calm	0	0	.....	.....	4	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.46	748.2	29.98	761.6	43.9	6.6	71	NW	0	0	.....	.....	3	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.75	755.7	30.05	763.3	34.3	1.3	76	NW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.93	760.1	30.07	763.7	61.2	16.2	70	SW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.87	758.7	29.67	761.3	74.1	23.4	60	SE	2.5	1.1	.....	.....	1k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.10	764.6	30.16	766.0	69.3	20.7	75	NW	1.7	0.74	.....	1	7	NE	.....	0.142	3.6	Almost cov..	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.18	690.3	.....	.....	60.8	16.0	75	NE	6.8	3.04	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.83	706.9	29.98	761.4	79.2	26.2	37	NW	3.0	1.33	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	29.84	758.0	29.98	761.6	85.1	29.5	40	W	1.7	0.75	.....	.....	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.18	741.2	30.06	763.5	68.0	20.0	67	NE	19.9	8.89	.....	.....	5	.....	.....	0	0	Cloudy.....	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.87	758.7	29.93	760.3	82.2	27.9	85	NE	3.4	1.5	.....	3c	4k	W	NE	0.035	0.9	Fair	Benito Vines, S. J
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.6	30.00	762.0	76.6	24.8	47	WSW	8.9	4.0	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.83	757.7	29.92	760.0	83.5	28.6	88	SE	5.8	2.60	.....	0s	2k	SE	SE	0	0	Clear.....	Leonardo de Tejeda, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.55	750.6	29.59	751.6	40.6	4.8	.....	E	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	
Umea	29.38	746.3	29.43	747.6	50.0	10.0	69	SW	.....	.....	6	.....	10	.....	.....	0.441	11.2	.....	
Hernosand	29.33	745.0	29.38	746.3	50.0	10.0	67	S	.....	.....	4	.....	7	.....	.....	1.874	47.6	.....	
Stockholm	29.40	746.7	29.58	751.2	53.8	12.1	67	WSW	.....	.....	6	.....	5	.....	.....	0.047	1.2	Raining.....	
Wisby	29.66	753 3	29.72	754.8	57.2	14.0	71	SW	.....	.....	6	.....	5	.....	.....	0.063	1.6	.....	
Sub-Series.																			
Upsala	29.45	748.1	29.53	750.0	52.2	11.2	69	SSW	14.5	6.5	.....	.....	9	.....	SW	0.276	7.00	Raining.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.67	728.3	30.08	764.0	61.0	16.1	67	N	.....	.....	2	.....	3	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.49	723.7	30.11	764.8	60.1	15.6	75	W	.....	.....	.....	.....	2	.....	.....	0	0	Clear.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm.; Thermometer, —0.2 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.78	756.4	75.2	24.0	70	SE	4	2.0	.....	.....	10	.....	WSW	0.583	14.8	.....	The Observatory.
Valona	.....	.....	29.84	757.8	75.6	24.2	.....	SW	.....	.....	1	.....	5	.....	.....	1.85	47.	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.87	758.6	82.4	28.0	62	N	.....	.....	1	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.10	764.5	30.40	772.1	49	9.4	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	W. R. Bigg.
*Chatham, N B	29.98	761.5	30.05	763.3	47	8.3	81	W	6	2.7	.....	8ck	2ks	SW	SW	0.28	7.1	Fair.....	G. A. Blair.
Charlottetown, P. E. Island.	29.95	760.7	29.99	761.7	54	12.2	94	NW	8	3.6	.....	.....	10n	.....	Calm	0.370	9.40	Light rain...	H. J. Cundall, C. E.
Cornwall, Ontario	30.18	766.6	30.38	771.6	43.7	6.5	91	NW	.....	.....	1	0	0	.....	.....	0.118	2.99	Clear.....	James Smith, M. A.
Dalhousie, N. B	29.88	758.9	30.04	763.0	46.8	8.2	79	W	.....	.....	3	.....	.....	.....	.....	0.04	1.0	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.84	745 2	29.39	746.5	51.3	10.7	100	SW	.....	.....	.....	.....	10s	.....	.....	0.26	6.6	Overcast.....	W. H. Bevis.
*Father Point, Quebec	30.06	763.5	30.08	764.0	45	7.2	72	W	36	16.1	.....	8k	2s	NW	W	0.24	6.1	Clearing.....	J. McWilliams.
Fredericton, N. B	30.07	763.8	30.13	765.3	47.7	8.7	73	NW	10	4.5	.....	0	0	.....	.....	0.070	1.78	Clear.....	Prof. Harrison.
*Fort Garry Manitoba	29.14	740.1	29.97	761.2	44	6.7	92	S	14	6.3	.....	0	0	.....	.....	0	0	Clear.....	James Stewart.
Granton, Ontario	29.38	746.2	30.51	774.9	44	6.7	84	Calm	.....	.....	0	0	1ks	.....	.....	Inap.	Inap.	Clear, ...	James Grant.
*Halifax, N. S	29.83	757.7	29.96	761.0	60	15.6	99	NW	12	5.4	.....	.....	10n	.....	NW	0.052	0.32	Heavy rain..	F. Allison, M. A.
Hamilton, Ontario	30.02	762.5	30.41	772.4	44.5	6 9	74	SW	.....	.....	2	4c	0	SW	.....	0	0	Fair.....	Geo. Dickson, M. A.
Heart's Content, N. F	29.16	766.1	30.18	766.6	60	10.0	71	SE	.....	.....	1	4k	2ks	.....	.....	0	0	Cloudy.....	E. Weedon.
*Kingston, Ontario	30.10	764.5	30.45	773.4	43	6.1	83	NW	9	4.0	.....	2c	0	Calm	.....	Inap	Inap	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.95	760.7	29.99	761.7	60.5	15.8	91	SW	14	6.3	.....	8k	0	S	.....	0	0	Threatening	C. H. Rigby.
*Montreal, Quebec	30.13	765.3	30.34	770.6	46	7.8	75	N	13	5.8	.....	0	0	.....	.....	0.09	2.3	Clear.....	C. H. McLeod, C. E
*Parry Sound, Ontario	29.83	757.7	30.55	776.0	36	2.2	80	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.68	763.9	30.45	773.4	45.2	7.3	72	NW	.....	.....	3	4k	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.78	756.4	30.50	774.7	43	6.1	92	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	H. Morgan.
Port Hastings, N. S	29.91	759.7	29.96	761.0	59.7	15.4	.....	SW	8	3.6	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Stanley, Ontario	29.83	757.7	30.49	774.4	45	7.2	93	N	2	0.9	.....	2k	0	N	.....	0.44	11.2	Fine.....	Peter Grant.
*Quebec, Quebec	29.90	759.4	30.23	767.8	43	6.1	75	NW	.....	.....	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	M. Payne.
*Rockliffe, Ontario	30.00	762.0	30.48	774.2	38	3.3	77	NW	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	Capt. Ashe, R. N
St. Andrews, N. B	30.07	763.8	30.12	765.0	48	8.9	70	N	4	1.8	.....	0	0	.....	.....	0.24	6.1	Clear.....	W. H. McIntyre.
St. John, N. B	29.94	760.5	30.10	764.5	49	9.4	78	NW	11	4.9	.....	0	7ks	.....	.....	0	0	Fair.....	Dr. Gove.
*Saugeen, Ontario	29.80	756.9	30.54	775.7	42	5.6	66	N	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
Stayner, Ontario	29.72	754.9	30.53	775.4	42	5.6	83	N	8	3.6	.....	.....	8n	.....	NW	0.21	5.3	Clearing.....	K. Stewart.
Stratford, Ontario	29.18	741.2	30.51	774.9	39.7	4.3	93	NW	3	1.3	.....	0	1s	.....	.....	0	0	Clear.....	R. J. Cole.
*Sydney, C. B	29.98	761.5	30.01	762.2	61	16.1	92	S	10	4.5	.....	.....	10n	.....	S	0	0	Cloudy.....	C. J. MacGregor, M. A.
*Toronto, Ontario	30.11	764.8	30.50	774.7	44	6.7	80	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	T. C. Hill.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Magnetic Observatory.
Sub-Series.																			Prof. John E. Oram.
St. Johns, Newfoundland	.....	.....	.....	.....	49.0	9.4	85	N	.....	.....	.....	4k	4n	.....	.....	0	0	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and these telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	30.13	765.3	30.36	771.1	46	7.8	77	NW	9	4.0	.....	0	0	.....	.....	0.10	2.5	Clear	
Alpena, Michigan	29.89	759.2	30.57	776.5	40	4.4	82	NW	1	0.4	.....	0	0	.....	.....	Inap	Inap.	Clear	
Atlantic City, New Jersey	30.33	770.4	30.35	770.9	53	11.7	66	NW	19	8.5	.....	0	0	.....	.....	0.05	1.3	Clear	
Augusta, Georgia	30.02	762.5	30.20	767.1	71	21.7	90	E	6	2.7	.....	0	Haze	.....	.....	0	0	Clear	
Baltimore, Maryland	30.38	771.6	30.43	772.9	53	11.7	61	N	8	3.6	.....	0	Sm'e	.....	Calm	0.02	0.5	Clear	
Barnegat, New Jersey	30.32	770.1	30.35	770.9	53	11.7	67	N	20	8.9	.....	2k	0	NE	.....	0.09	2.3	Clear	
Bismarck, Dakota	28.08	713.2	29.94	760.5	47	8.3	62	SE	17	7.6	.....	1cs	0	W	.....	0	0	Clear	
Boerne, Texas	28.67	728.2	.....	.....	73	22.8	85	Calm	0	0	.....	.....	10s	.....	E	0	0	Cloudy	
Boise City, Idaho	27.01	686.0	29.97	761.2	58	14.4	87	NW	12	5.4	.....	.....	10s	.....	NW	0	0	Cloudy	
Boston, Massachusetts	30.15	765.8	30.31	769.9	51	10.6	59	NW	16	7.2	.....	0	0	.....	.....	0.20	7.4	Clear	
Brackettville, Texas	28.97	735.8	29.96	761.0	75	23.5	77	SE	6	2.7	.....	5cs	2s	SW	SW	0.23	5.8	Cloudy	
Breckenridge, Minnesota	29.11	739.4	30.12	765.0	41	5.0	82	SE	23	10.3	.....	1c	0	Calm	.....	0	0	Clear	
Brownsville, Texas	30.02	762.5	30.08	764.0	76	24.4	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.74	755.4	30.47	773.9	46	7.8	84	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.13	765.3	30.40	772.1	47	8.3	62	N	4	1.8	.....	5k	0	W	.....	0.02	0.5	Fair	
Cairo, Illinois	29.87	758.7	30.27	768.8	55	12.8	81	E	8	3.6	.....	8ck	0	W	.....	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	51	10.6	59	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.26	641.6	30.06	763.5	66	18.9	36	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.80	680.7	30.29	769.4	52	11.1	60	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	37	2.8	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.25	768.3	30.26	768.6	69	20.6	76	NE	32	14.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Henry, Virginia	30.29	769.4	30.31	769.9	62	16.7	61	N	26	11.6	.....	.....	10s	.....	NW	0.06	1.5	Cloudy	
Cape Lookout, N. Carolina	30.20	767.1	30.22	767.6	69	20.6	95	NE	32	14.3	.....	.....	10n	.....	NE	0.22	5.6	Light rain	
Cape May, New Jersey	30.34	770.6	30.36	771.1	54	12.2	61	N	28	12.5	.....	0	0	.....	.....	0.16	4.1	Clear	
Castroville, Texas	29.32	744.7	30.00	762.0	76	24.4	86	SE	5	2.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.15	765.8	30.21	767.3	77	25.0	91	N	5	2.2	.....	0	8s	.....	NE	0	0	Fair	
Cheyenne, Wyoming	24.05	610.9	29.99	761.7	43	6.1	51	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Chicago, Illinois	29.77	756.1	30.48	774.2	53	11.7	67	NE	8	3.6	.....	0	8ks	.....	E	0	0	Cloudy	
Cincinnati, Ohio	29.79	756.7	30.47	773.9	53	11.7	67	E	6	2.7	.....	8cs	0	W	.....	0	0	Fair	
Cleveland, Ohio	29.74	755.4	30.49	774.4	48	8.9	85	E	5	2.2	.....	.....	10ks	.....	E	0	0	Cloudy	
Coleman City, Texas	28.35	720.1	30.00	762.0	63	17.2	89	E	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Columbus, Ohio	29.58	751.3	30.45	773.4	45	7.2	84	NE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Conchо, Texas	28.21	716.5	29.86	758.4	65	18.3	83	E	8	3.6	.....	0	10s	.....	Calm	0	0	Cloudy	
Corsicana, Texas	29.72	754.9	30.18	766.6	65	18.3	94	NE	6	2.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Davenport, Iowa	29.78	756.4	30.44	773.2	49	9.4	71	Calm	0	0	.....	1c	Haze	Calm	Calm	0	0	Clear	
Decatur, Texas	29.01	736.8	30.19	766.8	61	16.1	88	NE	8	3.6	.....	.....	10s	.....	.....	0.22	5.6	Threatening	
Denison, Texas	29.39	746.5	30.18	766.6	63	17.2	94	NE	3	1.3	.....	.....	10s	.....	NE	0.08	2.0	Cloudy	
Denver, Colorado	24.81	630.2	30.03	762.7	48	8.9	49	S	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.46	748.3	30.36	771.1	43	6.1	83	E	1	0.4	.....	5c	Haze	Calm	Calm	0	0	Hazy	
Detroit, Michigan	29.81	757.2	30.51	774.9	42	5.6	83	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.54	699.5	29.83	757.7	51	10.6	86	S	8	3.6	.....	5ck	5ks	S	SW	0.09	2.3	Cloudy	
Dubuque, Iowa	29.74	755.4	30.48	774.2	40	4.4	73	Calm	0	0	.....	5cs	Fog	S	Calm	0	0	Fair	
Duluth, Minnesota	29.70	754.4	30.41	772.4	43	6.1	76	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Eagle Pass, Texas	29.36	745.7	30.09	764.3	71	21.7	95	E	2	0.9	.....	5k	0	Calm	.....	0	0	Fair	
Eastport, Maine	30.06	763.5	30.13	765.3	49	9.4	64	NW	14	6.3	.....	0	0	.....	.....	0.30	7.6	Clear	
Edinburg, Texas	.....	.....	.....	.....	72	22.2	95	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	70	21.1	43	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.75	755.6	30.48	774.2	52	11.1	60	N	10	4.5	.....	2k	0	N	.....	0	0	Fair	
Escanaba, Michigan	29.87	758.7	30.57	776.5	34	1.1	79	NW	3	1.3	.....	5ck	0	NW	.....	Inap.	Inap.	Fair	
Florence, Arizona	28.46	722.9	30.06	763.5	65	18.3	40	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.64	651.2	29.71	754.6	60	10.0	86	SW	2	0.9	.....	1cs	0	SW	.....	0.02	0.5	Clear	
Fort Davis, Texas	25.34	643.6	30.30	769.6	66	18.9	68	S	7	3.1	.....	.....	10n	.....	S	0.02	0.5	Light rain	
Fort Gibson, Indian Ter	29.67	753.6	30.21	767.3	58	14.4	100	E	8	3.6	.....	.....	10n	.....	E	0.55	14.0	Light rain	
Fort Griffin, Texas	28.89	733.8	30.15	765.8	64	17.8	83	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort McKavett, Texas	27.88	708.1	29.76	755.9	67	19.4	84	E	6	2.7	.....	.....	10s	.....	E	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.98	736.1	30.08	764.0	57	13.9	94	E	4	1.8	.....	.....	10n	.....	Calm	0.84	21.3	Light rain	
Fredericksburg, Texas	28.38	720.8	29.90	759 4	72	22.2	90	Calm	.....	.....	0	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Galveston, Texas	30.08	764.0	30.12	765.0	75	23.9	86	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Graham, Texas	29.08	738.6	30.11	764.8	68	20.0	74	Calm	0	0	.....	.....	10s	.....	Calm	0.39	9.9	Cloudy	
Grand Haven, Michigan	29.85	758.2	30.53	775.4	43	6.1	83	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.63	752.6	30.44	773.2	47	8.3	85	NE	4	1.8	.....	8cs	0	Calm	.....	0	0	Fair	
Indianola, Texas	30.07	763.8	30.10	764.5	76	24.4	95	NE	14	6.3	.....	.....	10s	.....	E	0	0	Cloudy	
Jacksboro, Texas	28.99	736.3	30.10	764.5	64	17.8	78	SE	10	4.5	.....	0	10s	.....	S	0.02	0.5	Cloudy	
Jacksonville, Florida	30.09	764.3	30.11	764.8	77	25.0	82	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.75	755.6	30.38	771.6	46	7.8	77	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.93	760.2	29.96	761.0	81	27.2	87	NE	17	7.6	.....	3c;cs	2ks	NE;E	NE	0.07	1.8	Fair	
Kittyhawk, North Carolina	30.25	768.3	30.27	768.8	66	18.9	79	NE	43	19.2	.....	.....	10s	.....	NE	0.70	17.8	Cloudy	
Knoxville, Tennessee	29.28	743.7	30.28	769.1	59	15.0	65	NE	12	5.4	.....	3c	3s	NW	N	Inap.	Inap.	Fair	
La Crosse, Wisconsin	29.69	754.1	30.46	773.7	39	3.9	100	NW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
La Mesilla, New Mexico	26.17	664.7	30.32	770.1	56	13.3	81	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.64	752.8	29.97	761.2	78	25.6	82	SE	3	1.3	.....	0	0	.....	.....	0.03	0.8	Clear	
Lead City, Dakota	24.71	627.6	29.98	761.5	49	9.4	64	S	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Leavenworth, Kansas	29.40	746.7	30.26	768.6	60	10.0	79	S	4	1.8	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.65	753.1	29.98	761.5	60	15.6	88	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.81	757.2	30.38	771.6	51	10.6	72	NE	7	3.1	.....	8c	Sm'e	NW	NE	0	0	Fair	
Lynchburg, Virginia	29.71	754.6	30.39	771.9	60	15.6	53	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.79	756.7	30.53	775.4	43	6.1	59	SW	8	3.6	.....	10ck	0	SW	.....	0.03	0.8	Cloudy	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.93	760.2	30.26	768.6	55	12.8	87	NE	4	1.8	.....	5ck	0	SW	.....	0	0	Fair	
Milwaukee, Wisconsin	29.77	756.1	30.53	775.4	49	9.4	78	E	2	0.9	.....	.....	9ks	SW	0	0	Cloudy		
Mobile, Alabama	30.09	764.5	30.13	765.3	73	22.8	85	N	10	4.5	.....	0	0	.....	.....	0.46	11.7	Clear	
Montgomery, Alabama	29.91	760.5	30.17	766.3	69	20.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.29	743.5	30.48	774.2	40	7.8	84	N	1	0.4	.....	.....	Fog	.....	Calm	0.07	1.8	Foggy	
Mt. Washington, N. H.	23.81	604.8	30.17	766.3	21	— 6.1	100	NW	54	24.1	.....	.....	Fog	.....	NW	0.66	16.8	Foggy	
Nashville, Tennessee	29.76	755.9	30.30	769 6	57	13.9	75	NE	3	1.3	.....	8c	0	W	.....	0	0	Fair	
New Haven, Connecticut	30.24	768.1	30.36	771.1	53	11.7	63	N	8	3.6	.....	0	0	.....	.....	0.34	8.6	Clear	
New London, Connecticut	30.30	769.6	30.24	770.6	56	13.3	63	N	8	3.6	.....	0	0	.....	.....	0.08	2.0	Clear	
New Orleans, Louisiana	30.04	763 0	30.10	764.5	77	25.0	82	N	8	3.6	.....	1k	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	30.26	768.6	30.30	769.6	54	12.2	61	NW	14	6.3	.....	0	0	.....	.....	0.07	1.8	Clear	
New York, New York	30.21	767.3	30.39	771.9	54	12.2	54	NW	9	4.0	.....	0	Haze	.....	E	0.01	0.3	Clear	
Norfolk, Virginia	30.29	769.4	30.35	770.9	60	15.6	76	NE	9	4.0	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
North Platte, Nebraska	27.17	690.1	29.76	755.9	46	7.8	73	SE	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.52	749.8	29.55	750.6	52	11.1	93	SW	9	4.0	.....	.....	10n	.....	Calm	0.61	15.5	Light rain	
Omaha, Nebraska	29.14	740.1	30.24	768.1	48	8.9	78	SE	6	2.7	.....	5c	2s	Calm	S	0	0	Fair	
Oswego, New York	30.12	765.0	30.45	773.4	50	10.0	65	N	10	4.5	.....	8k	0	NW	.....	0.01	0.3	Fair	
Pembina, Dakota	29.18	741.2	30.01	762.2	43	6.1	75	SE	16	7.2	.....	2c	0	Calm	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.36	771.1	30.41	772.4	51	10.6	59	N	14	6.3	.....	0	Haze	.....	Calm	0.11	2.8	Clear	
Phœnix, Arizona	28.80	731.5	.....	.....	66	18.9	45	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.93	454.7	30.14	765.5	26	— 3.3	52	SW	8	3.6	.....	10c	0	NW	.....	0	0	Cloudy	
Ploche, Nevada	23.98	609.1	29.75	755.6	58	14.4	17	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.04	752.8	30.48	774.2	43	6.1	92	NW	1	0.4	.....	.....	Fog	.....	Calm	0.07	1.8	Foggy	
Port Huron, Michigan	29.82	757.4	30.52	775.2	46	7.8	69	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.21	767.3	30.26	768.6	51	10.6	60	N	10	4.5	.....	0	0	.....	.....	0.16	4.1	Clear	
Portland, Oregon	29.59	751.6	29.69	754.1	54	12.2	87	S	18	8.0	.....	.....	10n	.....	S	0.09	2.3	Light rain	
Prescott, Arizona	24.85	631.2	30.21	767.3	45	7.2	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.41	747.0	30.23	767.8	62	16.7	88	N	3	1.3	.....	0	Fog	.....	Calm	0.03	0.8	Foggy	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	78	25.6	82	NE	14	6.3	.....	5cs	0	Calm	.....	0	0	Fair	
Red Bluff, California	29.04	752.8	29.99	761.7	60	15.6	60	S	17	7.6	.....	0	1ks	.....	S	Inap.	Inap.	Clear	
Rio Grande City, Texas	29.91	759.7	30.12	765.0	76	24.4	86	SE	3	1.3	.....	.....	10s	.....	SE	0	0	Cloudy	
Rochester, New York	29.82	757.4	30.45	773.4	49	9.4	71	W	4	1.8	.....	2ck	0	W	.....	0	0	Fair	
Roseburg, Oregon	29.31	744.5	29.87	758.7	55	12.8	87	SW	8	3.6	.....	.....	10s	.....	Calm	0.12	3.0	Cloudy	
Sacramento, California	29.95	760.7	30.03	762.7	61	16.1	71	S	4	1.8	.....	.....	10ks	.....	SW	0	0	Cloudy	
St. Louis, Missouri	29.75	755.6	30.34	770.6	48	8.9	78	NE	7	3.1	.....	5cs	0	Calm	.....	0	0	Fair	
St. Marks, Florida	30.11	764.8	30.12	765.0	74	23.3	95	NE	4	1.8	.....	1k	0	Calm	.....	0.62	15.7	Clear	
St. Paul, Minnesota	29.49	749.0	30.35	770.9	41	5.0	73	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.45	646.4	29.78	756.4	63.0	17.2	33	S	4	1.8	.....	.....	10s	.....	SW	0	0	Cloudy	
San Antonio, Texas	29.44	747.8	30.01	762.2	75	23.9	90	NE	3	1.3	.....	.....	10ks	.....	Calm	Inap.	Inap.	Cloudy	
San Diego, California	29.95	760.7	30.02	762.5	62	16.7	94	N	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.80	756.9	30.49	774.4	55	12.8	68	NE	8	3.6	.....	2k	0	NE	.....	0	0	Fair	
Sandy Hook, New Jersey	30.34	770.6	30.37	771.4	55	12.8	56	NE	16	7.2	.....	0	Haze	.....	Calm	0.50	12.7	Clear	
San Francisco, California	29.96	761.0	30.03	762.7	59	15.0	91	SW	4	1.8	.....	0	Fog	.....	SW	0	0	Fair	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	41	5.0	82	N	2	0.9	.....	0	0	.....	.....	0.04	1.0	Clear	
Savannah, Georgia	30.09	764.3	30.18	766.6	73	22.8	95	N	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Shreveport, Louisiana	29.96	761.0	30.18	766.6	64	17.8	94	NE	4	1.8	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Silver City, New Mexico	24.42	620.3	.....	.....	50	10.0	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.21	767.3	30.24	768.1	67	19.4	95	N	14	6.3	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Springfield, Massachusetts	30.22	767.6	30.35	770.9	54	12.2	61	N	4	1.8	.....	0	0	.....	.....	0.03	16.0	Clear	
Stockton, Texas	27.07	687.6	30.07	763.8	68	20.0	60	SE	4	1.8	.....	8k	0	NW	.....	0	0	Cloudy	
Thatcher's Island, Mass	30.22	767.6	30.28	769.1	52	11.1	73	NW	21	9.4	.....	0	0	.....	.....	0.55	14.0	Clear	
Toledo, Ohio,	29.80	756.9	30.50	774.7	47	8.3	77	NW	9	4.0	.....	0	1s	.....	Calm	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	65	18.3	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.14	765.5	30.17	766.3	78	25.6	91	NE	11	4.9	.....	2cs	2ks	Calm	NE	0	0	Fair	
Umatilla, Oregon	29.30	744.2	.....	.....	54	12.2	87	SE	4	1.8	.....	0	8s	.....	W	0.35	8.9	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	50	10.0	78	SW	.....	.....	2	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.22	742.2	30.02	762.5	71	21.7	86	NE	2	0.9	.....	5c	2s	S	NE	0	0	Cloudy	
Vicksburg, Mississippi	29.96	761.0	30.21	767.3	68	20.0	90	NE	8	3.6	.....	5k	5s	Calm	Calm	0	0	Fair	
Virginia City, Montana	24.04	610.6	29.52	749.8	54	12.2	49	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Visalia, California	29.67	753.6	30.04	763.0	60	15.6	60	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.34	770.6	30.46	773.7	52	11.1	66	N	12	5.4	.....	0	0	.....	.....	0.22	5.6	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	52	11.1	60	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.16	766.1	30.23	767.8	66	18.9	90	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	46	7.8	69	SW	14	6.3	.....	0	8s	.....	SW	Inap	Inap.	Cloudy	
Wood's Holl, Mass	30.22	767.6	30.28	769.1	53	11.7	60	NW	16	7.2	.....	0	0	.....	.....	0.09	2.3	Clear	
Yankton, Dakota	28.82	734.6	30.25	768.3	40	4.4	82	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.72	754.9	29.88	758.9	66	18.9	83	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.95	760.7	30.00	762.0	29.0	1.7	94	NW	12	5.4	.....	2c	0	NW	.....	0.05	1.3	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.92	760.0	29.94	760.6	84	28.9	75	E	1.2	0.5	.....	8c	4ks	Calm	E	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.77	756.1	29.79	756.7	81	27.2	87	N	.....	.....	1	8c	2s	.....	NE	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	83	28.3	87	E	4	1.8	.....	8c	4ks	N	.....	1.06	26.9	Clearing	G. O. Gellich.
Kingston, Jamaica, W. I	29.98	761.5	29.99	761.7	81	27.2	91	Calm	0	0	.....	8c	2s	Calm	.....	0.21	5.3	.....	James Gall.
Navassa, W. I	29.74	755.4	29.82	757.4	81	27.2	.....	NW	11.7	5.2	.....	.....	.....	.....	.....	0.42	10.7	Showery	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	84	28.9	75	E	.....	.....	2	0	5k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.26	641.6	.....	.....	66.0	18.9	85	Calm	0	0	.....	2cs	8s;n	.....	.....	0.32	8.1	.....	Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,626 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.04 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.28	769.1	76.5	24.7	76.5	24.7	88	NE	9	4.0	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
NavyYard,Portsmouth,N.H	30.21‡	767.3‡	.....	.....	50	10.0	79	WNW	3	1.3	.....	.....	2	.....	.....	0.1	3.	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan	29.77*	756.1*	68.5	20.3	64.8	18.2	73	E	.....	.....	6	.....	7k	.....	SW	0.29	7.4	.....	.....	Fair.....	
Adams. S. 45° 05′, W. 124° 19′	29.96	761.0	57	13.9	47	8.3	85	W	.....	.....	2–3	.....	.....	.....	WSW	0	0	Long	W	Cloudy.....	
Alliance, N. 40° 05′, E. 13° 14′	29.78‡	756.4‡	.....	.....	75	23.9	64	WNW	.....	.....	4	.....	6	.....	WNW	.....	.....	Light	NW	Hazy.....	
Ashuelot. Yokohama, Japan	29.85	758.2	67	19.4	67	19.4	69	NE	.....	.....	6	.....	5	.....	NE	.....	.....	Mod'ate	NE	Squally.....	
Alaska. Talcahuano, Chili	30.10	764.5	57	13.9	52	11.1	79	NNE	.....	.....	4	.....	10	.....	SW	0	0	Long	N	Misty.....	
Colorado. New York, N. Y.	30.34‡	770.6‡	.....	.....	55	12.8	67	NNE	10	4.5	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.	
Constitution, Havre, France	30.17‡	766.3‡	.....	.....	61	16.1	71	SW	.....	.....	3	.....	6	.....	SW	.....	.....	.....	.....	Pleasant.....	
Despatch, Volo, Turkey	29.71‡	754.6‡	.....	.....	78	25.6	57	SE	.....	.....	1	.....	5	.....	NE	.....	.....	.....	.....	Fair.....	
Essex, S. 30° 25′, W. 40° 10′	30.20	767.1	65	18.3	64	17.8	100	ESE	.....	.....	5	.....	10	.....	E	.....	.....	Long	SE	Cloudy	
Franklin, Norfolk, Va.	30.39	771.9	67	19.4	62	16.7	77	N	13	5.8	.....	.....	8	.....	NE	0	0	.....	.....	Cloudy	
Gettysburg Gibraltar	29.92‡	760.0‡	.....	.....	73	22.8	??	W	.....	.....	2	.....	0	.....	.....	0	0	Smooth	.....	Light mist...	
Guard, Bahia, Brazil	30.04	763.0	77	25.0	75	23.9	86	N	.....	.....	2	.....	2	.....	N	.....	.....	.....	.....	Clear.....	
Hartford, Rio de Janeiro, Brazil	30.15	765.8	.....	.....	72	22.2	80	SW	5.4	2.4	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Marion, Naples, Italy	29.74	755.4	70	21.1	72	22.2	62	SSW	.....	.....	1	.....	5	.....	SW	0	0	.....	.....	Fair.....	
Michigan, Erie, Pa	30.17†	766.3†	.....	.....	52.5	11.4	70	N	.....	.....	4	.....	2	.....	N	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.78‡	756.4‡	.....	.....	65	18.3	100	ENE	.....	.....	4	.....	2	.....	ENE	.....	.....	.....	.....	Fair.....	
New Hampshire, Port Royal, S. C.	30.36†	771.1†	.....	.....	77	25.0	95	NNE	9	4.0	.....	.....	8	.....	ENE	0	0	.....	.....	Fair.....	
Onward, Callao, Peru	30.14†	765.5†	.....	.....	63	17.2	83	S	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.	30.50	774.7	52	11.1	53	11.7	100	NW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Palos, Tientsin, China	30.14	765.5	66	18.9	61	16.1	71	W	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. N. 42° 3′, W. 69° 38′	30.31	769.9	59	15.0	58	14.4	58	N	.....	.....	5	.....	5	.....	.....	.....	.....	Mod'ate	N	Clear.....	
Powhatan, N. 42° 50′, W. 70° 30′	30.38‡	771.6‡	.....	.....	53	11.7	61	NNW	2.4	1.1	.....	.....	2	.....	.....	.....	.....	Smooth	N	Clear.....	
Ranger. Hong-Kong, China	30.05	763.3	85	29.4	84	28.9	87	E	.....	.....	0–1	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas	30.03	762.7	78	25.6	78	25.6	95	NW	.....	.....	1	.....	2	.....	N	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md	30.40‡	772.1‡	.....	.....	56	13.3	63	N	.....	.....	3	.....	2	.....	N	0.33	8.4	.....	.....	Clear	
Saratoga, Philadelphia, Pa	30.32*	770.1*	.....	.....	52	11.1	66	NW	.....	.....	4	.....	0	.....	.....	Heavy	Heavy	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.27	768.8	57	13.9	55	12.8	68	NW	2	0.9	.....	.....	0	.....	.....	0.23	5.8	.....	.....	Clear.....	
Supply, Havre, France	30.24	768.1	62	16.7	62	16.7	66	WNW	.....	.....	2	.....	5	.....	WNW	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass.	30.29‡	769.4‡	.....	.....	52	11.1	73	NNW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, N. 48° 46′, W. 7° 19′	30.21‡	767.3‡	.....	.....	69	20.6	61	W	.....	.....	3–4	.....	8	.....	W	0.6	15.	Mod'ate	W	Showery	
Tuscarora. La Paz, Mexico	29.75	755.6	80	26.7	81	27.2	78	SSW	.....	.....	1–2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Vandalia, Barcelona, Spain	30.01‡	762.2‡	.....	.....	76	24.4	64	SSW	.....	.....	1	.....	2	.....	SW	.....	.....	.....	.....	Clear.	
Wabash, Boston, Mass.	30.29‡	769.4‡	.....	.....	51	10.6	59	NW	11	4.9	.....	.....	0	.....	.....	0.19	4.8	.....	.....	Clear.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, Ulsaloddy, W. T		29.51*	749.5*				SE			4		10						Showery	Capt. Cobb.
S. S City of Peking																			Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 16° 44′, W. 99° 42′		29.98†	761.5†	80	26.7	??	E			3		8		NW	0	Small	SE	Misty	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota																			Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zelandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			
S. S. Baltic																			Capt. H. H. Perry.
S. S. Britannic																			Capt. J. W. Jenning.
S. S. Celtic																			Capt. W. H. Thompson.
S. S. Germanic																			Capt. B. Glendell.
S. S. Republic																			Capt. C. W. Kennedy.
																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force, except Republic, by the scale 0 to 12; for the Britannic and Republic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 43° 10′, E. 178° 16′		29.64*	752.8*	60	15.6	77	SSW			6		n		SW		Rough	SSE	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		30.06†	763.5†				SE			3		n				Heavy		Raining	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 45′, W. 173° 25′		30.37	771.4	68	20.0	100	S			3		10		SW		3	W	Showery	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 50° 0′, W. 8° 15′		30.16	766.1	66.5	20.3	60	W			4		5		W		2	W	Fine	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES. Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				55	12.8	93	Var.			1		8			Light			Light rain...	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.25?	768.3?	60	15.6	82	N			3		0			0			Clear	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 44° 16′ W. 52° 39′		30.22*	767.6*				Calm	0	0			2		E		Mod'ate	NE	Fine...	Capt. Jackson. Capt. Nichols.
S. S. Vaderland																			

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 18° 30′, W. 65° 10′		29.90	759.4	84	28.9	75	E	13	5.8		2c	5k	Calm	E	0.74 in or 18.8 mm.	Swell	NE	D. clouds	Capt. James Jorgensen.
Schooner Florence																			O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 28, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.04	763.1	68.4	20.2	83	NE			5		1			0	0	Very fair.	Dr. Ollive.
Nemours			30.02	762.5	76.1	24.5	79	NNW			5		4			0	0	Cloudy	Kesxuche.
Algiers			29.97	761.2	77.0	25.0	66	NE			3		2			0	0	Fair	Tourillere.
La Calle			30.05	763.3	77.0	25.0	66	NW			3		4			0	0	Cloudy	Foufrede.
Tunis			30.04	762.9	79.2	26.2	53	W			5		5			0	0	Cloudy	Jacques.
Sfax			30.14	765.5	80.6	27.0	.....	WNW			3		1			0	0	Very fair	Gau.
Saida			29.99	761.8	82.0	27.8	45	SE			1		3			0	0	Pretty fair	Herbin.
Tebessa			30.02	762.5	73.8	23.2	54	N			3		4			0	0	Cloudy	Watrin.
Geriville			29.99	761.8	77.0	25.0	22	S			3		0			0	0	Clear	Brugniaux.
Laghouat			30.11	764.8	68.4	20.2	48	W			8		5			0	0	Cloudy	Bertrand.
Biskra			30.08	763.9	86.0	30.0	37	NW			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Gériville, 1,350? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.52	749.9	30.07	763.7	63.0	17.2	61	NE			3		6			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.22	742.1	29.98	761.5	56.1	13.4	73	W			3		10			0.035	0.9		Dr. Wierzbiski
Eperies	29.03	737.4	29.90	759.4	60.3	15.7	60	N			3		8k;8		S	0	0		Julius Mikoink.
Gratz	28.82	732.1	30.00	761.4	61.2	16.2	55	NW			4		1			0.035	0.9		Andreas Rospini.
Hermannstadt	28.31	719.1	29.79	756.7	52.5	11.4	100	NNW			2		10			0.248	6.30	Raining	Prof. A. Gottschling.
Kremsmünster	28.78	731.1	30.12	765.0	57.6	14.2	68	WNW			2		5			0	0		Prof. C. Wagner
Lemberg	28.81	731.7	29.79	756.7	51.1	10.6	96	NW			2		10			0.480	12.2		Dr. T. Stanecki.
Pola	29.92	759.9	30.03	762.7	68.7	20.4	64	SW			1		3ck			0	0		I.R.Hydrographic Office
Szathmar	29.41	747.7	29.91	759.7	53.2	11.8	76	E			5		10			0.622	15.8		Julius Csics, S. J.
Szegedin	29.69	754.1	29.97	761.2	55.4	13.0	85	N			2		10			0.059	1.50		Karl Stancel.
Trieste	29.95	760.6	30.05	763.2	68.4	20.2	62	NW			1		1			0	0	⅛ Clear	P. Busin.
Vienna	29.36	745.8	30.07	763.8	59.5	15.3	59	NW			1		7			0.039	1.0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.91	759.8	30.11	764.8	64.0	17.8	75	W			2	0	10	W	W	0	0		Royal Observatory
Furnes	30.13	765.2	30.15	765.8	65.3	18.5	73	W			2		5			0	0		M. E. de Cae.
Maeseyck	29.99	761.7	30.12	765.0	62.6	17.0	82	WSW			2		7			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.
Aberdeen	29.90	759.4	30.00	762.0	55.4	13.0		W	6	2.7			6			0.040	1.02	D. clouds	W. Boswell.
Ardrossan	29.97	761.2	29.98	761.5	60	15.6		Calm			0		7					Misty	George Carrick.
Armagh, Observatory			30.03	762.7	61.2	16.2		SW	9	4.0			9					Overcast	S. Call.
Bidston, (Liverpool Obs.)			30.04	763.0	58	14.4		WSW	23	10.3			10					Raining	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.60	751.8	30.00	762.0	61.8	16.6		W			2		7			0.02	0.5	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.83	758.9	29.90	759.4	85	29.4		SE			1		4					D. clouds	Pvt. G. W. Roberts, A. H. O.
Cambridge, Observatory			30.06	763.5	69.0	20.6		SW			1		1					D. clouds	H. Todd.
Cardington			30.10	764.5	65.6	18.3		W			1		7					D. clouds	John McLaren.
Chatham, School M. E.	30.03	762.7	30.16	766.1	66.2	19.0		SE			1		9					D. clouds	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.60	726.4	30.06	763.5	57.0	13.9		NW			2		4					Fine	Alexander Watt.
Donaghadee	29.99	761.7	30.02	762.5	61	16.1		W			1		10					Overcast	J. Mac Gowan.
Dover	30.08	764.0	30.10	764.5	64	17.8		WSW			2		4					½ clouded	J. Costello.
Eccles, (near Manchester)			30.05	763.3	59.8	15.4		SE	3.6	1.6			10					Drizzling	Thomas Mackereth.
Falmouth, Observatory	29.93	760.2	30.16	766.1	62.0	16.7		WSW			1		8					Overcast	The Staff.
Fort Napier, (Natal)																			Pvt. G. Salmon, A.H. O.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	84	28.9		SW			0		5					D. clouds	
Galway, Queen's College			30.00	762.0	61	16.1		SW			1		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.93	760.2	29.98	761.5				E			2		6					Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.78	756.4	29.98	761.5	59.8	15.4		W			2							Blue sky	D. G. Maclean.
Great Yarmouth	30.06	763.5	30.06	763.5	61	16.1		W			2		4					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.94	760.5	30.11	764.8	63.4	17.4		WSW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.94	760.5	30.15	765.8	62	16.7		WSW			1		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.20	767.1	64	17.8		S			1		3ck			0	0	Fine	M. P. Moyle.
Holyhead	29.99	761.7	30.05	763.3	62	16.7		WSW			3		10					Misty	John Tilston.
Jersey	29.90	759.4	30.20	767.1	63.5	17.5		SW			2		6					D. clouds	J. Fisher.
Kew, Observatory	30.07	763.8	30.11	764.8	64.1	17.8		WSW	5	2.2			9k					Threatening	The Staff.
Kingstown	30.03	762.7	30.06	763.5	63	17.2		W			3		10					Overcast	George Mitchell.
Leicester, Museum			30.05	763.3	65.0	18.3		SW			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.85	758.2	29.99	761.7	80.6	27.0		NW			1		3k					D. clouds	Sergt. Beckett.
Nairn	29.88	758.9	29.97	761.2	53	11.7		Calm			0		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			29.82	757.4	84.5	29.2		NE			3		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.86	758.4	30.04	763.0	68.3	20.2		S			3		8k;ks;	ck]	W	0.010	0.25	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.54	750.3	30.05	763.3	67.2	19.6		SW			4		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.10	764.5	64	17.8		SW			1		10					Overcast	H.E. Bellamy.
Plymouth	30.07	763.8	30.15	765.8	63.4	17.4		SW			1		10					Overcast	John Merrifield.
Roche's Point	30.05	763.3	30.10	764.5	62	16.7		SW			2							Foggy	W. Kennedy.
Saint Ann's Head	29.94	760.5	30.10	764.5	61	16.1		SW			2		10					Foggy	John C. Walker.
Sandwick Manse, (Orkneys.)			30.00	762.0	51	10.6		NNW	14	6.3			8					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.70	754.4	73.0	22.8		S			2		6			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.78	756.4	30.06	763.5	63.0	17.2		SW			2		10			0	0	Overcast	W. F. Cooper.
Silloth, Rectory	29.97	761.2	30.00	762.0	59.0	15.0	84	Calm			0		10			0.030	0.76	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.63	752.6	30.03	762.7	58.6	14.8		SW			2		10					Raining	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.90	759.4	30.12	765.0	65.7	18.7		SW			0-1		5?					Overcast?	Rev. C. H. Griffith, F.M.S.
Thurso			30.00	762.0	50	10.0		NNW			2		10					Gloomy	John Trotter.
Truro, Royal Institution			30.16	766.1	68	20.0		NW			2		6					D. clouds	W. Newcombe.
Valencia, Observatory	30.04	763.0	30.07	763.8	62.5	16.9		SSE	17	7.6			10					Misty	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.84	757.9	46.0	7.8	81	NW			2		7k			0.01	0.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.98	761.5	30.17	766.3	74.3	23.5	65	ESE	26.0	11.6		0	4		ESE	0.07	1.8	Squally	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	48.7	9.3	73	NE	6	2.7			0			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.																Sea or swell. Height scale 0–9	Direction from—		
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 30′, W. 54° 10′			30.20	767.1	81	27.2		W			4		4	W		3	W	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 20° 35′, W. 43° 50′			30.01	762.2	85	29.4					3		4				E	D. clouds	Capt. D. W. A. Quaile
S. S. Peruvian																			Capt. W. H. Smith, R. N. R.
Schooner Traveller, N. 44° 15′, W 34° 35′			29.96	761.0	62	16.7		NW			6		5			5	NW	D. clouds	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.22	666.0	.....	.....	67.1	19.5	98	NE	.....	.....	1	1c;p	3s	.....	.....	0.14	3.6	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.76	755.8	29.80	757.0	54.5	12.5	64	NW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....
Fanöe	29.89	759.2	29.91	759.7	55.8	13.2	66	WNW	.....	.....	6	.....	9	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.04	763.0	30.08	763.9	46.2	7.9	68	N	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....
Vestervig	29.61	752.2	29.78	756.6	53.2	11.8	74	W	.....	.....	6	.....	5	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.69	754.2	30.24	768.2	61.2	16.2	87	NE	.....	.....	1	.....	5	.....	SW	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.97	761.2	30.05	763.2	74.3	23.5	45	N	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.61	752.2	30.16	766.1	62.4	16.9	66	NE	.....	.....	1	.....	8ic	.....	NE	0	0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.91	759.7	30.19	766.8	65.5	18.6	68	W	.....	.....	2	.....	10	.....	NW	0	0	Covered	Frere Eugene Marie, Director.
Besançon	29.28	743.7	30.17	766.2	61.5	16.4	75	E	.....	.....	2	.....	2	.....	N	Inap.	Inap.	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.50	749.3	30.04	763.1	59.9	15.5	78	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.86	758.5	30.11	764.7	72.3	22.4	71	S	.....	.....	1	.....	2	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.64	752.9	30.04	763.1	73.8	23.2	59	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.61	752.0	30.17	766.4	66.0	18.9	77	E	.....	.....	2	.....	7	W	W	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.84	758.0	30.16	766.0	61.5	16.4	89	Calm	.....	.....	0	.....	8	.....	.....	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.78	731.1	30.12	765.0	63.3	17.4	56	E	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	Allnard, Director.
Commercy, Normal School	29.34	745.2	30.21	767.3	59.9	15.5	73	W	.....	.....	1	.....	2cn	.....	W	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	28.91	734.4	30.06	763.4	80.8	27.1	31	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Riva.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.89	759.2	30.20	767.0	61.0	16.1	69	NE	.....	.....	1	.....	5	.....	E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.21	742.0	30.11	764.9	64.4	18	74	N	.....	.....	4	.....	5	.....	N	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.14	765.6	30.17	766.4	64.4	18	66	NNE	.....	.....	4	.....	0	.....	.....	0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	29.16	740.6	30.20	767.0	58.6	14.8	72	N	.....	.....	1	.....	4cs	.....	N	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.79	756.6	29.97	761.2	73.8	23.2	65	N	.....	.....	6	.....	2ic	.....	.....	0	0	.....	Boyer, Director.
Privas, Normal School	28.89	733.7	29.93	760.3	63.5	17.5	57	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.28	642.0	.....	.....	48.7	9.3	61	E	.....	.....	4	.....	0	.....	.....	0	0	Clear	Allnard, Director.
Rochefort, Naval Obs'y	30.09	764.2	30.12	765.0	67.3	19.6	58	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.08	764.1	30.17	766.3	65.8	18.8	70	W	.....	.....	1	.....	8	.....	SW	0	0	Very cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.17	766.3	61.9	16.6	73	S	.....	.....	1	.....	8	.....	SE	0	0	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	30.02	762.5	30.19	766.7	63.5	17.5	70	W	.....	.....	0-1	.....	10	.....	NW	0	0	Covered	E. Renou.
Tarbes, Normal School	28.97	735.9	30.03	762.7	66.2	19	81	SE	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.80	757.0	29.83	757.7	82.8	28.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.22	31.	.....	L'Abbé Marchési.
Lyons	.....	.....	30.18	766.5	63.5	17.5	71	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	29.95	760.8	78.3	25.7	45	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	24.95	633.6	30.26	768.6	64.4	18.0	20	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	29.98	761.6	70.7	21.5	84	E	.....	.....	3	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.90	759.5	30.18	766.5	63.0	17.2	75	WNW	.....	.....	2	.....	9	.....	N	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.02	762.6	77.5	25.3	34	SE	11.2	5.00	.....	.....	0	.....	.....	0	0	.....	Dr. Finot.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.66	575.6	.....	.....	59.5	15.3	.....	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	30.37	745.9	30.09	764.3	68.7	20.4	47	N	.....	.....	1	.....	0	.....	.....	0	0	.....	The Staff.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Marquet.
Versailles	.....	.....	30.19	766.9	63.0	17.2	70	NW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Dr. A. Bériguy.
Zi-Ka-Wei, (near Shanghai)	30.06	763.5	30.08	764.1	64.9	18.3	94	Calm	0	0	.....	.....	10	.....	.....	0.016	0.4	Covered	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per sec. cond.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.21	741.8	30.05	763.2	59.7	15.4	64	W			3		6	W		0.008	0.2	Raining	Prof. Dr. Hoh.
Berlin	29.84	757.9	30.01	762.2	61.3	16.3	62	S			2		10			0	0		Prof. Arndt.
Breslau	29.51	749.6	30.04	763.1	57.9	14.4	50	W			3		10			0	0		Royal University Obs'y
Carlsruhe	29.73	755.1	30.15	765.9	60.8	16.0	69	SW			2		5			0	0		Albert Senz.
Cassel	29.49	749.0	30.10	764.5	57.6	14.2	92	SW			2		8	WSW		0.085	2.17		Dr. H. Möhl.
Crefeld	29.92	760.0	30.08	764.1	64.9	18.3	64	W			2		8			0	0		Director Lose.
Emden	30.05	763.3	30.09	764.2	60.3	15.7	67	W			5		0			0	0		Prof. Prestel.
Frankfort on the Main	29.78	756.4	30.14	765.6	61.7	16.5		SW			2		9			0	0		Physical Society.
Friedrichshafen	28.72	729.5	30.15	765.7	58.8	14.9	78	SW			2		5	SW		0	0		M. Wilhelm.
Hamburg	29.94	760.4	30.01	762.2	54.1	12.3	93	NW			5		10			0.031	0.8	Raining	Captain F. Hegemann.
Kiel	29.94	760.4	29.95	760.8	56.5	13.6	80	W			4		5			0.023	0.59		Prof. G. Karsten.
Königsberg, (Prussia)	29.70	754.3	29.78	756.4	55.9	13.3	89	W			4		6			0.004	0.1		Prof. E. Luther.
Köslin			29.84	757.8	57.0	13.9		W			2		4			0.272	6.9		H. Müller.
Leipsic, Observatory	29.63	752.5	30.04	763.0	62.6	17.0	57	WSW			4		8	W		0	0		Prof. Bruhns.
Memel, Naval School	29.68	753.9	29.73	755.1	59.5	15.3	70	WSW			5		2k						Reinbrecht and Skalweit.
Neufahrwasser	29.81	757.2	29.83	757 6	57.6	14.2	79	W			5		7			0	0		A. Lothes.
Posen	29.72	754.8	30.00	762.1	57.7	14.3	65	W			6		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.04	752.9	30.19	766.8	61.3	16.3	63	W			1		7	SW		0	0		Astronomical Observatory.
Stuttgart	29.19	741.3	30.11	764.9	61.5	16.4	56	W			1		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.61	752.1	30.13	765.4	60.4	15.8	78	S			3		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.64	727.4	30.13	765.3	57.7	14.3	60	WNW	1.3	0.6			5ck		WSW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.90	759.5	29.94	760.5	56.5	13.6	79	WNW			5		7			0.067	1.7		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.39	746.4	29.76	756.0	80.6	27.0		SW			4.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.76	755.8	29.81	757.1	84.4	29.1	72	WSW	19?	8.5?			0			0	0	Blue sky	
Deesa	29.33	744.9	29.79	756.7	92.0	33.3	52	NW					1	NE		0	0	D. clouds	
Bombay	29.74	755.3	29.77	756.2	83.9	28.8	84	NW	17	7.6			10	WNW	SW	0.02	0.5	Overcast	
Poona	27.79	705.9	29.79	756.8	77.4	25.2	83	NNE					9		NNE	0.29	7.4	D. clouds	
Lahore	28.97	735.9	29.70	754.3	89.1	31.7	45	Calm	1.0	0.5			0			0	0	Blue sky	
Belgaum	27.27	692.7	29.83	757.6	71.7	22.1	92	W	10	4.5			10		ENE;W	0.30	7.6	Raining	
Roorkee	28.63	732.3	29.72	754.8	85.6	29.8	64	SE	2	0.9			1			0	0		
Agra	29.17	741.0	29.72	755.0	92.6	33.7	46	N								0	0		
Nagpur	28.70	729.0	29.73	755.1	84.9	29.4	50	Calm	3.0	1.3			2			0	0	Blue sky	
Lucknow																			
Allahabad	29.38	746.4	29.69	754.2	84.5	29.2	83	NNE	0.8	0.4			4			0	0	D. clouds	
Patna	29.54	750.4	29.72	755.0	85.0	29.4	82	E	0.6	0.3			6	E	E	0	0	D. clouds	
Hazaribagh	27.73	704.4	29.73	755.2	79.3	26.3	84	WNW	5.5	2.5			6			0.22	5.6	Thunder-storm	
Cuttack	29.67	753.7	29.76	755.8	82.2	27.9	81	E	1.1	0.5			3			0	0	D. clouds	
Calcutta (Alipore)	29.74	755.3	29.76	755.9	79.4	26.3	96	S	1	0.4			9			0	0	Overcast	
Goalpara	29.37	746.1	29.76	755.9	80.4	26.9	78	S	1	0.4			1			0	0	D. clouds	
Chittagong	29.72	754.9	29.81	757.2	87.9	31.1	69	Calm	2.1	0.9			4			0	0		
Sibsagar	29.46	748.4	29.80	756.8	80.2	26.8	89	WSW	0.7	0.3			10	W	W	0.08	2.0	D. clouds	
Jubbulpore	28.40	721.4	29.76	755.8	83.0	28.3	68	Calm	1.8	0.8			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.66	753.3	30.06	763.5	68.4	20.2	60	SW	0.7	0.3	.....	.....	5	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.03	760.3	30.04	763.0	70.3	21.3	65	SSE	3.8	1.7	.....	.....	4	N	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.84	757.9	30.03	762.7	70.3	21.3	62	E	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.72	729.4	30.00	762.0	69.8	21.0	60	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.50	749.2	30.00	762.1	67.3	19.6	60	NE	.....	.....	2	.....	1	NE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.11	739.5	30.00	762.1	69.4	20.8	64	NNW	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.12	714.3	30.00	761.9	66.2	19.0	59	WNW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.81	757.2	30.03	762.7	72.0	22.2	74	SE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.84	757.9	30.00	762.1	73.4	23.0	69	SW	.....	.....	2	.....	1	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.71	754.7	30.02	762.6	70.2	21.2	63	ENE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.76	755.8	30.01	762.2	73.4	23.0	48	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.86	758.5	29.95	760.6	72.0	22.2	76	WSW	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.52	724.3	30.04	763.0	66.2	19.0	49	SE	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.80	757 0	29.98	761.4	77.0	25.0	53	S	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. P G. S. Ferrari.
Naples, O. U	29.79	756.7	29.99	761.7	75.6	24.2	43	E	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.65	753.0	29.89	759.3	70.2	21.2	63	NNE	17.4	7.8	.....	.....	3	NNE	.....	0.295	7.5	.....	Prof. C. De Giorgi.
Cagliari	29.78	756.4	29.97	761.2	78.6	28.1	56	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.06	738.2	29.97	761.2	72.3	22.4	74	SW	1.5	0.6	.....	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.75	755.6	29.99	761.8	73.0	22.8	62	WNW	6.9	3.1	.....	.....	6	W	.....	0.059	1.5	.....	Prof. G. Cacciatore.
Syracuse	29.90	759.4	29.97	761.3	73.9	23.3	55	NE	4.9	2.2	.....	.....	7	WNW	.....	0.024	0.6	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.48	748.9	30.04	763.0	71.1	21.7	51	NE	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.84	757.9	30.04	763.0	64.1	17.8	88	W	0.2	0.1	.....	.....	0	.....	.....	0	0	Clear	I. Arai, Director.
Tokei (Yeddo) Observatory	30.08	764.0	30.15	765.8	57.0	13.9	91	SSE	2.5	1.1	.....	0	0	.....	.....	0	0	Clear	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.0	17.8	75	N	.....	.....	4	0	2ks	.....	E	Inap.	Inap.	Clear	P. Ceballos.
Guadalajara	25.09	637.3	30.05	763.3	58.1	14.5	73	W	.....	.....	1	0	2s	.....	E	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.46	621.4	30.02	762.9	59.7	15.4	90	SW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.15	588.0	30.15	765.8	56.8	13.7	87	NW	0.9	0.4	.....	0	9k	.....	N	0	0	Cloudy	Central Observatory.
Pabellon, (Aguascalits)	.....	.....	.....	.....	54.3	12.4	86	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	23.38	593.7	30.03	762.7	52.5	11.4	86	N	.....	.....	.....	0	0	.....	.....	0.19	4.69	.....	Prof. B. Gonzalez.
Tlacotalpam	29.90	759.5	29.92	759.8	75.7	24.3	92	W	.....	.....	4	0	6n	.....	N	0.178	4.5	Threatening	M, M. Cházaro.
San Luis Potosi	24.27	616.7	30.19	766.7	50.0	10.0	83	E	.....	.....	.....	0	0	.....	.....	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.99	761.7	30.02	762.4	77.0	25.0	92	Calm	0	0	.....	0	4ks	.....	SW	0.020	0.5	Dense haze	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	59.0	15.0	77	NE	.....	.....	2	5	2	SW	NE	0	0	¾ cloudy	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.4	30.08	764.1	51 8	11.0	89	NNW	2.4	1.0	.....	0	0	.....	.....	0.166	4.20	Clear	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.37	720.6	30.00	761.9	78.4	25.8	85	NE	0.6	0.4	.....	0	1	.....	W	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,486 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.13	765.3	30.13	765.3	66.6	19.2	.....	WSW	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	29.98	761.6	30.04	763.0	59.9	15.5	.....	W	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.04	763.0	30.04	763.0	61.5	16.4	.....	W	.....	.....	4	.....	.....	.....	.....	0.228	5.8	.....	
Hellevoetsluis	30.08	764.0	30.08	764.0	64.0	17.8	80	WSW	.....	.....	2	.....	.....	.....	.....	0.008	0.2	Very cloudy	H. v d Brink.
Utrecht	30.05	763.2	30.10	764.4	62.6	17.0	72	W	.....	.....	2	.....	8	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.67	753.7	29.73	755.1	49.6	9.8	76	NW	14.1	6.3	.....	.....	3	.....	.....	0.453	11.5	Raining.....	
Brönö	29.50	749.3	29.54	750.3	50.4	10.2	62	ESE	4	2	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.41	747.1	29.56	750.7	57.7	14.3	62	SSW	7	3	.....	.....	6	.....	.....	0	0.	.....	
Tromsö	29.70	754.4	29.74	755.5	41.0	5.0	63	NE	34	15	.....	.....	8	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.76	755.9	29.95	760.7	70.0	21.1	85	W	9.8	4.4	.....	.....	3	.....	.....	1.024	26.0	.....	Dr. J. A. Sampaio.
Campo Major	28.96	735.6	29.93	760.2	86.0	30.0	21	SSW	1.8	0.8	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.95	760.6	30.03	762.8	78.6	23 1	53	SE	6.9	3.1	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.62	752.4	29.97	761.3	69.6	20.9	62	WSW	8.7	3.9	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.89	759.3	29.97	761.1	73.4	23.0	73	WSW	8.7	3.9	.....	.....	4	.....	.....	0.394	10.0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.92	760.0	78.8	26.0	.....	W	.....	.....	3	.....	2	.....	W	1	.....	D. clouds...	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 14° 43′, E. 12° 4′	.....	.....	30.02	762.5	71.6	22.0	.....	WSW	.....	.....	3	.....	10	.....	WSW	3	wsw	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.90	759.4	86.0	30.0	.....	WSW	.....	.....	1	.....	9	.....	W	2	SW	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.96	761.0	84.6	29.2	.....	ENE	.....	.....	4	.....	0	.....	.....	1	SE	Blue sky.....	M T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.89	759.1	58.5	14.7	57	WNW	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.39	746.5	29.80	757.0	58.5	14.7	63	SW	2	1	.....	.....	6	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.43	747.6	29.67	753.6	58.1	14.5	68	SSW	9	4	.....	.....	8k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.63	752.6	29.65	753.0	58.8	14.9	66	SW	11	5	.....	.....	7n	.....	.....	.....	.....	.....	Central Physical Obs
Knopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....[n	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.06	738.0	29.67	753.7	61.9	16.6	64	SE	7	3	.....	.....	10c;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.66	753.4	29.73	755.2	65.5	18.6	97	SE	13	6	.....	.....	7n	.....	.....	.....	.....	Raining.....	Kurdakof.
Kerich	29.74	755.4	29.76	755.9	76.5	24.7	69	SSE	4	2	.....	.....	5	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.38	746.3	29.91	759.8	65.3	18.5	43	S	13	6	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.61	752.1	29.81	757.1	77.0	25.0	28	ESE	18	8	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs
Archangel	29.68	753.8	29.70	754.3	38.3	3.5	97	E	9	4	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sseliwerstow.
Tiflis	28.63	727.2	29.99	761.8	74.7	23.7	46	Calm	0	0	.....	.....	5k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.15	765.8	30.07	763.7	72.5	22.5	44	ESE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.66	753.4	30.13	765.3	55.8	13.2	55	WSW	11	5	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.79	756.7	30.06	763.4	62.6	17.0	46	SSW	13	6	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.04	737.7	30.02	762.4	35.8	2.1	94	W	2	1	.....	.....	10	.....	.....	.....	.....	Raining.....	Meteorological Obs.
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	28.41	721.6	30.07	763.7	70.5	21.4	50	NE	9	4	.....	.....	4	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.31	744.4	29.84	757.8	42.6	5.9	57	NE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.74	755.5	30.04	763.1	33.6	0.9	73	NNW	4	2	.....	.....	8	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.78	756.4	29.92	760.0	62.8	17.1	78	SW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455 ? m., or 1,492.7 ? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165.2 ? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.6	30.01	762.2	73.0	22.8	60	SE	2.4	1.06	.....	.....	.....	.....	.....	0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.97	761.1	30.02	762.5	75.9	24.4	63	E	1.5	0.67	.....	1	.....	SE	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.09	688.0	.....	.....	73.4	23.0	62	NE	8.4	3.75	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.82	706.5	29.92	759.9	84.6	29.2	35	S	6.0	2.67	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	29.89	759.3	30.04	763.0	82.0	27.8	49	SW	2.7	1.19	.....	1	2	WNW	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.02	737.2	29.88	759.0	76.6	24.8	52	SW	6.2	2.78	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.81	757.1	29.87	758.7	82.0	27.8	77	NNE	16.6	7.4	.....	1c	5k	NW	NE	0.126	3.2	Fair...	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.88	758.8	29.97	761.2	83.3	28.5	42	ESE	31.4	14.0	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	29.82	757.4	29.91	759.7	83.1	28.4	89	SE	3.8	1.70	.....	6cs	3k	SE	SE	0.079	2.00	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29 50	749.4	29.54	750.4	41.7	5.4	.....	NNE	.....	.....	4	.....	10	.....	.....	0.472	12.0	.....	
Umea	29.46	748.3	29.51	749.6	41.7	5.4	94	NNE	.....	.....	4	.....	10	.....	.....	0.197	5.0	.....	
Hernosand	29.43	747.4	29.48	748.7	49.1	9.5	78	N	.....	.....	2	.....	8	.....	.....	0.075	1.9	.....	
Stockholm	29.35	745.4	29.52	749.9	54.7	12.6	70	NW	.....	.....	2	.....	5	.....	.....	0.008	0.2	.....	
Wisby	29.52	749.9	29.58	751.4	58.3	14.6	72	W	.....	.....	7	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.44	747.7	29.51	749.6	54.0	12.2	72	WNW	5.1	2.3	.....	.....	10	.....	W	0.002	0.06	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.71	729.1	30.11	764.8	61.3	16.3	67	N	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.53	724.6	30.14	765.6	61.3	16.3	70	NW	.....	.....	2	.....	2	.....	.....	0	0	Clear	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.6 mm.; Thermometer, +0.1 cent.; Relative Humidity, +1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.73	755.2	72.1	22.3	73	N	7.	3.0	.....	.....	10	.....	SW	0.268	6.8	.....	The Observatory.
Valona	.....	.....	29.09	761.7	77.2	25.1	.....	W	.....	.....	2	.....	0	.....	.....	0.35	9.	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.86	758.4	88.0	31.1	54	W	.....	.....	1	.....	3ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	30.22	767.6	30.53	775.4	46	7.8	.....	W	1	0.4	.....	0	b	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N B	30.14	765.5	30.20	767.1	43	6.1	71	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.08	764.0	30.12	765.0	45	7.2	61	NW	12	5.4	.....	0	5ks	.....	NW	0.120	3.05	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	30.32	770.1	30.52	775.2	37.6	3.1	96	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	30.05	763.3	30.21	767.3	41.5	5.3	74	W	.....	.....	8	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	29.39	746.5	29.44	747.8	50.3	10.2	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.15	3.8	Overcast	W. H. Bayis.
*Father Point, Quebec	30.26	768.6	30.29	769.4	41	5.0	72	W	30	13.4	.....	0	2s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.25	768.3	30.32	770.1	40.1	4.5	64	NW	13	5.8	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	28.76	730.5	29.56	750.8	54	12.2	87	SE	2	0.9	.....	5k	5ks	W	W	0	0	Cloudy	James Stewart.
Granton, Ontario	29.28	743.7	30.42	772.7	42	5.6	83	E	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	30.04	763.0	30.17	766.3	45	7.2	66	NW	16	7.2	.....	0	0	.....	.....	0.068	1.47	Clear	F. Allison, M. A.
Hamilton, Ontario	30.10	764.5	30.40	774.4	37.7	3.2	85	SW	.....	.....	3	6c	0	SW	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.73	755.1	29.75	755.6	49	9.4	81	NW	.....	.....	5	3ck	3ks	NNW	.....	0.37	9.4	Cloudy	E. Weedon.
*Kingston, Ontario	30.20	767.1	30.55	776.0	43	6.1	79	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.95	760.7	29.99	761.7	50.1	10.1	68	NW	14	6.3	.....	5k	0	NW	.....	0.56	14.2	Fair	C. H. Rigby.
*Montreal, Quebec	30.32	770.1	30.52	775.2	46	7.8	56	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	29.82	757.4	30.54	775.7	40	4.4	77	E	14	6.3	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.75	755.6	30.53	775.4	40.7	4.8	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.72	754.9	30.43	772.9	42	5.6	83	NE	10	4.5	.....	10c	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.07	763.8	47.3	8.5	.....	NW	20	8.9	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.70	754.4	30.36	771.1	44	6.7	81	E	10	4.5	.....	5c	2ks	N	E	0	0	Cloudy	M. Payne.
*Quebec, Quebec	30.12	765.0	30.46	773.7	37	2.8	71	W	.....	.....	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	30.07	763 8	30.55	776.0	33	0.6	89	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	30.27	768.8	30.32	770.1	41	5.0	65	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	30.14	765.5	30.31	769.9	41	5.0	65	NW	17	7.6	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.71	754.6	30.45	773 4	41	5.0	78	SE	8	3.6	.....	2cs	0	.....	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	29.68	753.9	30.48	774.2	43	6.1	79	SE	8	3.6	.....	2k	0	SW	.....	0	0	Fair	R. J. Cole.
Stratford, Ontario	29.11	739.4	30.44	773.2	38.2	3.4	80	SE	10	4.5	.....	1cs	0	Calm	.....	0	0	Clear	C. J. MacGregor, M. A.
*Sydney, C. B	30.00	762.0	30.03	762.7	50	10.0	76	W	9	4.0	.....	0	5ks	.....	W	0.55	14.0	Fair	T. C. Hill.
*Toronto, Ontario	30.11	764.8	30.50	774.7	48	8.9	61	SE	8	3.6	.....	2cs	2s	SE	Calm	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	55.6	13.1	90	SW	.....	.....	.....	4k	4sn	.....	.....	0.22	5.6	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.29	769.4	30.53	775.4	39	3.9	82	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.72	754.9	30.38	771.6	45	7 2	84	Calm	0	0	.....	1k	0	Calm	.....	0	0	Clear	
Atlantic City, New Jersey	30.40	772.1	30.42	772.7	51	10.6	86	N	10	4.5	.....	8c;k	0	Calm;NW	.....	0	0	Fair	
Augusta, Georgia	30.11	764.8	30.29	769.4	63	17.2	67	N	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy.	
Baltimore, Maryland	30.44	773.2	30.50	774.7	50	10.0	65	NE	5	2.2	.....	5c	2s	SW	Calm	0	0	Fair	
Barnegat, New Jersey	30.42	772.7	30.44	773.2	58	14.4	58	E	24	10.7	.....	8k	0	NE	.....	0	0	Fair	
Bismarck, Dakota	27.86	707.6	29 71	754.6	53	11.7	80	SW	6	2.7	.....	0	5s	.....	NW	0	0	Fair	
Boerne, Texas	28.56	725.4	.....	.....	73	22.8	85	SE	4	1.8	.....	5k	0	SE	.....	0	0	Fair	
Boise City, Idaho	26.95	684.5	29.91	759.7	47	8.3	85	N	4	1.8	.....	5k	0	W	.....	0	0	Fair	
Boston, Massachusetts	30.33	770.4	30.49	774.4	45	7.2	61	NW	12	5.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Brackettville, Texas	28.84	732.5	29.83	757.7	76	24.4	77	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Breckenridge, Minnesota	28.68	728.5	29.64	752.8	53	11.7	100	S	30	13.4	.....	.....	10s	.....	S	0	0	Threatening	
Brownsville, Texas	29.93	760.2	29.99	761.7	75	23.9	95	Calm	0	0	.....	5k	0	E	.....	0	0	Fair	
Buffalo, New York	29.75	755.6	30.48	774.2	41	5.0	74	NE	10	4.5	.....	1c	0	W	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.32	770.1	30.60	777.2	42	5 6	66	E	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Cairo, Illinois	29.70	754.4	30.09	764.3	58	14.4	88	E	6	2.7	.....	2ck	5s	SW	Calm	0.10	2.5	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	49	9.4	57	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.19	639.8	29.99	761.7	63	17.2	24	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.67	677.4	30.16	766.1	51	10.6	65	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.36	694.9	29.93	760 2	37	2.8	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	68	20.0	70	NE	28	12.5	.....	Haze	Haze	.....	.....	0	0	Hazy	
Cape Henry, Virginia	30.34	770.6	30.36	771.1	65	18.3	68	NE	18	8.0	.....	0	5s	.....	NE	0	0	Fair	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	69	20.6	75	NE	28	12.5	.....	.....	10s	.....	NE	0.02	0.5	Cloudy	
Cape May, New Jersey	30.42	772.7	30.44	773.2	53	11.7	73	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.22	742.2	29.89	759.2	76	24.4	86	SE	4	1.8	.....	.....	10s	.....	SE	0.05	1.3	Cloudy	
Charleston, South Carolina	30.20	767.1	30.26	768.6	65	18.3	78	NE	11	4.9	.....	.....	10s	.....	NE	0.06	1.5	Cloudy	
Cheyenne, Wyoming	23.97	608.8	29.91	759.7	40	4.4	73	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.50	749.3	30.19	766.8	55	12.8	74	SE	7	3.1	.....	5cs	0	Calm	.....	0	0	Fair	
Cincinnati Ohio	29.69	754.6	30.25	768.3	56	13.3	66	E	6	2.7	.....	5k	4ks	SW	S	0	0	Cloudy	
Cleveland, Ohio	29.62	752 3	30.36	771.1	45	7.2	76	SE	5	2.2	.....	5cs	0	W	.....	0	0	Fair	
Coleman City, Texas	28.19	716.0	29.80	756.9	67	19.4	89	S	8	3.6	.....	2ck	2s	NW	Calm	0	0	Fair	
Columbus, Ohio	29.40	746.7	30.25	768.3	49	9.4	77	E	6	2.7	.....	5ck	5s	Calm	Calm	0	0	Cloudy	
Concho, Texas	28.02	711.7	29.64	752.8	68	20.0	84	S	12	5.4	.....	5k	0	S	.....	0.03	0.8	Fair	
Corsicana, Texas	29.56	750.8	30.02	762.5	66	18.9	100	SE	2	0.9	.....	.....	Fog	.....	Calm	0.50	12.7	Foggy	
Davenport, Iowa	29.49	749.0	30.13	765.3	53	11.7	80	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Decatur, Texas	28.82	732.0	29.94	760.5	69	20.6	85	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	29.21	741.9	29.98	761.5	68	20.0	95	S	8	3.8	.....	.....	10s	.....	S	0.34	8.6	Cloudy	
Denver, Colorado	24.76	628 9	29.98	761.5	44	6.7	52	SE	6	2.7	.....	0	2s	.....	Calm	0	0	Clear	
Des Moines, Iowa	29.13	739.9	30.01	762.2	52	11.1	93	SE	6	2.7	.....	.....	10n	.....	Calm	0.03	0.8	Light rain	
Detroit, Michigan	29.62	752.3	30.30	769.6	52	11.1	86	NE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.24	691.9	29.43	747.5	64	17.8	94	SW	12	5.4	.....	0	5ks	.....	SW	0	0	Fair	
Dubuque, Iowa	29.41	747.0	30.11	764.8	51	10.6	79	SE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.32	744.7	30.00	762.0	49	9.4	85	SE	6	2.7	.....	0	5ks	.....	Calm	0	0	Fair	
Eagle Pass, Texas	29.24	742.7	29.96	761.0	71	21.7	95	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.29	769.4	30.36	771.1	44	6.7	52	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	72	22.2	95	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	67	19.4	50	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.67	753.6	30.40	772.1	48	8.9	70	SE	16	7.2	.....	2c	0	Calm	.....	0	0	Fair	
Escanaba, Michigan	29.62	752.3	30.28	769.1	51	10.6	79	S	17	7.6	.....	5k	0	S	.....	0	0	Fair	
Florence, Arizona	28.39	721.1	29.99	761.7	65	18.3	49	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.52	648.2	29.58	751.3	50	10.0	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.24	641.1	30.20	767.1	69	20.6	60	SW	5	2.2	.....	2k	0	S	.....	Inap.	Inap.	Fair	
Fort Gibson, Indian Ter	29.44	747.8	29.97	761.2	66	18.9	89	S	8	3.6	.....	.....	10s	.....	S	0.17	4.3	Cloudy	
Fort Griffin, Texas	28.67	728.2	29.90	759.4	67	19.4	95	SE	6	2.7	.....	2k	2s	Calm	Calm	0.82	20.8	Fair	
Fort McKavett, Texas	27.82	706.6	29.65	753.1	75	23.9	68	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.73	729.7	29.80	756.9	69	20.6	90	SE	16	7.2	.....	.....	10s	.....	SE	0.14	3.6	Cloudy	
Fredericksburg, Texas	28.25	717.5	29.75	755.6	71	21.7	85	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.97	761.2	30.01	762.2	79	26.1	82	SE	5	2.2	.....	0	5ks	.....	SE	0	0	Fair	
Graham, Texas	28.88	733.5	29.90	759.4	69	20.6	95	S	6	2.7	.....	0	5ks	.....	W	0.24	6.1	Fair	
Grand Haven, Michigan	29.61	752 1	30.28	769.1	44	6.7	84	SE	7	3.1	.....	5cs	5s	E	E	0	0	Threatening	
Indianapolis, Indiana	29.41	747.0	30.19	766.8	54	12.2	67	E	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
Indianola, Texas	29.99	761.7	30.01	762.2	78	25.6	86	S	5	2.2	.....	5k	0	S	.....	0	0	Fair	
Jacksboro, Texas	28.81	731.8	29.90	759.4	70	21.1	90	S	8	3.6	.....	8ck	0	SE	.....	0.02	0.5	Cloudy	
Jacksonville, Florida	30.06	763 5	30.08	764.0	75	23.9	77	NE	12	5.4	.....	10k	0	NE	.....	0.90	22.9	Cloudy	
Keokuk, Iowa	29.45	748.0	30.06	763.5	55	12.8	81	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Key West, Florida	29.86	758.4	29.89	759.2	80	26.7	87	NE	15	6.7	.....	5k	1ks	NE	Calm	0.30	7.6	Fair	
Kittyhawk, North Carolina	30.30	769.6	30.32	770.1	65	18.3	73	NE	26	11.6	.....	0	8s	.....	NE	0	0	Fair	
Knoxville, Tennessee	29.27	743.4	30.28	769.1	60	15.6	77	NE	1	0.4	.....	2ck	0	SW	.....	Inap.	Inap.	Clear	
La Crosse, Wisconsin	29.34	745.2	30.08	764.0	50	10.0	85	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.06	661.9	30.22	767.6	48	8.9	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.53	750.0	29.86	758.4	77	25.0	91	SE	3	1.3	.....	10k	0	SW	.....	0	0	Cloudy	
Lead City, Dakota	24.66	626.9	29.95	760.7	42	5.6	50	S	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Leavenworth, Kansas	29.11	739.4	29.93	760.2	59	15.0	88	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Los Angeles, California	29.58	751.3	29.92	760.0	52	11.1	82	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.64	752.8	30 20	767.1	56	13.3	69	NE	4	1.8	.....	.....	10s	.....	NE	0.01	0.3	Cloudy	
Lynchburg, Virginia	29.76	755.6	30.45	773.4	51	10.6	79	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Marquette, Michigan	29.51	749.5	30.22	767.6	48	8.9	78	SE	10	4.5	.....	5k	0	SE	.....	0	0	Fair	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.80	756.9	30.11	764.8	64	17.8	88	NE	3	1.3	.....	.....	6ks?	.....	SW	0	0	Cloudy ?....	
Milwaukee, Wisconsin	29.40	746.7	30.13	765.3	54	12.2	80	SE	11	4.9	.....	8ck	1s	Calm	Calm	0	0	Cloudy	
Mobile, Alabama	30.07	763.8	30.11	764.8	74	23.3	86	E	10	4.5	.....	0	1s	.....	SE	Inap.	Inap.	Clear	
Montgomery, Alabama	29.96	761.0	30.18	766.6	70	21.1	71	E	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.28	743.7	30.35	770.9	50	10.0	72	E	7	3.1	.....	3c;cs	Fog	Calm	Calm	0	0	Fair	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	17	— 8.8	83	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.66	753.4	30.19	766.8	64	17.8	83	NE	1	0.4	.....	.....	10s	.....	NE	0	0	Cloudy	
New Haven, Connecticut	30.39	771.9	30.52	775.2	47	8.3	62	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.46	773.7	30.51	774.9	59	10.0	65	N	6	2.7	.....	0	1s	.....	W	0	0	Clear	
New Orleans, Louisiana	29.99	761.7	30.05	763.3	77	25.0	77	N	5	2.2	.....	1k	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	30.42	772.7	30.48	774.2	49	9.4	67	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.33	770.4	30.52	775.2	50	10.0	51	NE	15	6.7	.....	1c	Haze	W	Calm	0	0	Fair	
Norfolk, Virginia	30.33	770.4	30.39	771.9	62	16.7	72	NE	5	2.2	.....	2k	0	NE	.....	0	0	Clear	
North Platte, Nebraska	27.02	686.3	29.51	749.6	58	14.4	91	SW	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Olympia, Washington Ter.	29.54	750.3	29.58	751.3	50	10.0	93	SW	8	3.6	.....	.....	10n	.....	Calm	0.68	17.3	Light rain	
Omaha, Nebraska	28.83	732.3	29.88	758.9	56	13.3	87	SE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	30.22	767.6	30.55	776.0	46	7.8	69	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	28.74	730.0	29.54	750.3	55	12.8	74	SE	25	11.2	.....	.....	10s	.....	S	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Philadelphia, Pa	30.45	773.4	30.51	774.9	47	8.3	62	NE	12	5.4	.....	2c	0	Calm	.....	0	0	Clear	
Phœnix, Arizona	28.70	729.0	.....	.....	66	18.9	36	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.86	453.3	30.06	763.5	25	— 3.9	38	SW	36	16.1	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	23.88	606.5	29.65	753.1	56	13.3	24	S	19	8.5	.....	0	8s	.....	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.56	750.8	30.39	771.9	45	7.2	84	NE	3	1.3	.....	10c;k	0	Calm;NW	.....	0	0	Cloudy	
Port Huron, Michigan	29.67	753.6	30.36	771.1	46	7.8	77	E	10	4.5	.....	2ck	5ks	W	Calm	0	0	Fair	
Portland, Maine	30.42	772.7	30.48	774.2	45	7.2	61	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	29.63	752.6	29.73	755.1	53	11.7	93	S	10	4.5	.....	.....	10ks	.....	S	0.77	19.6	Threatning	
Prescott, Arizona	24.73	628.1	30.09	764.8	60	15.6	20	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.23	742.4	30.10	764.5	69	20.6	95	SE	4	1.8	.....	0	Haze	.....	Calm	0.01	0.3	Hazy	
Punta Rassa, Florida	29.95	760.7	29.96	761.0	77	25.0	86	NE	10	4.5	.....	2ck	5s	Calm	NE	0	0	Fair	
Red Bluff, California	29.50	749.3	29.85	758.2	56	13.3	69	S	8	3.6	.....	0	1ks	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.78	756.4	29.99	761.7	74	23.3	90	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	
Rochester, New York	29.88	758.9	30.52	775.2	43	6.1	67	S	3	1.3	.....	1c	Sm'c	Calm	Calm	0	0	Clear	
Roseburg, Oregon	29.28	743.7	29.84	757.9	50	10.0	96	S	3	1.3	.....	0	8s	.....	Calm	0.28	7.1	Cloudy	
Sacramento, California	29.81	757.2	29.89	759.2	52	11.1	86	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.52	749.8	30.09	764.3	55	12.8	87	E	9	4.0	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy	
St. Marks, Florida	30.09	764.3	30.10	764.5	73	22.8	81	NE	16	7.2	.....	2ck	8s	Calm	NE	0	0	Cloudy	
St. Paul, Minnesota	29.10	739.1	29.92	760.0	48	8.9	85	SE	16	7.2	.....	10ck	0	SW	.....	0	0	Cloudy	
Salt Lake City, Utah	25.41	645.4	29.74	755.4	51.0	10.6	45	SE	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
San Antonio, Texas	29.32	744.7	29.89	759.2	73	22.8	91	SE	1	0.4	.....	.....	10s	.....	Calm	1.40	35.6	Cloudy	
San Diego, California	29.88	758.9	29.95	760.7	56	13.3	94	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.64	752.8	30.33	770.4	49	9.4	71	SE	10	4.5	.....	10cs	0	NW	.....	0	0	Cloudy	
Sandy Hook, New Jersey	30.45	773.4	30.48	774.2	51	10.6	72	NE	20	8.9	.....	5c	0	NE	.....	0	0	Fair	
San Francisco, California	29.88	758.9	29.95	760.7	56	13.3	87	SW	4	1.8	.....	0	5ks	.....	SW	0.08	0.8	Fair	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	44	6.7	60	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	64	17.8	94	NE	8	3.6	.....	.....	10s	.....	NE	0.36	9.1	Threatening	
Shreveport, Louisiana	29.83	757.7	30.05	763.3	69	20.6	95	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.80	617.2	.....	.....	50	10.0	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.25	768.3	30.29	769.4	61	16.1	82	N	12	5.4	.....	.....	10s	.....	N	0.06	1.5	Cloudy	
Springfield, Massachusetts	30.38	771.6	30.52	775.2	45	7.2	68	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.92	683.8	29.92	760.0	67	19.4	64	SE	8	3.6	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	30.42	772.7	30.47	773.9	47	8.3	77	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.59	751.6	30.27	768.8	52	11.1	79	NE	3	1.3	.....	.....	10s	.....	NE	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	66	18.3	33	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	67	19.4	89	NE	23	10.3	.....	.....	10s	.....	E	0	0	Threatening	
Umatilla, Oregon	29.30	744.2	.....	.....	51	10.6	86	Calm	0	0	.....	.....	10s	.....	W	0.10	2.5	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	SW	.....	.....	2	10c	0	S	.....	0.03	0.8	Fair	
Uvalde, Texas	29.09	738.9	29.88	758.9	75	23.9	81	E	2	0.9	.....	5k	5s	S	Calm	0.01	0.3	Cloudy	
Vicksburg, Mississippi	29.80	756.4	30.11	764.8	71	21.7	90	SE	1	0.4	.....	2c	0	Calm	.....	0	0	Fair	
Virginia City, Montana	24.03	610.4	29.51	749.5	34	1.1	70	Calm	0	0	.....	.....	10s	.....	Calm	0.20	5.1	Cloudy	
Visalia, California	29.56	750.8	29.93	760.2	51	10.6	86	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.38	771.6	30.49	774.4	51	10.6	65	NE	10	4.5	.....	8ck	0	W	.....	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	69	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.20	767.1	30.28	769.1	58	14.4	87	N	9	4.0	.....	.....	10s	.....	N	0	0	Cloudy	
Winnemucca, Nevada	25.48	647.2	29.84	757.9	45	7.2	46	S	11	4.9	.....	5k	0	SW	.....	0	0	Fair	
Wood's Holl, Mass	30.40	772.1	30.45	773.4	50	10.0	78	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.62	726.9	29.88	758.9	58	14.4	82	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Yuma, Arizona	29.64	752.8	29.80	756.9	72	22.2	24	W	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.86	758.2	29.90	759.4	28.5	— 1.9	94	W	4	1.8	.....	2c	0	W	.....	0	0	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.87	758.7	29.89	759.2	83	28.3	79	NE	3.6	1.6	.....	2cs	8ks	NE	NE	0.09	2.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.69	754.1	29.71	754.6	80	26.7	82	NW	.....	.....	1	4c	2ks	.....	SW	Blank	Blank	.....	Robert Mason.
St. Thomas	.....	.....	.....	.....	85	29.4	87	SE	3	1.3	.....	8c	4ks	E	.....	0.39	9.9	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	29.95	760.7	29.96	761.0	81	27.2	95	Calm	0	0	.....	8c	2ks	W	SE	0	0	.....	James Gall.
Navassa, W. I	29.70	754.4	29.78	756.4	82.5	28.1	.....	S	24.6	11.0	.....	.....	.....	.....	.....	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	84	28.9	75	E	.....	.....	2	4c	4k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	68.0	20.0	78	Calm	0	0	.....	2c	2ks	.....	.....	0	0	.....	Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,323 (?) ft., or 403.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 633.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.8 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,286 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.22	767.6	76	24.4	76	24.4	84	NE	20	8.9	.....	.....	8d	.....	.....	0	0	.....	.....	Threatening	
NavyYard,Portsmouth,N.H	30.43‡	772.9‡	.....	.....	43	6.1	68	WNW	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.09*	764.3*	76.5	24.7	61	16.1	77	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Clear.	
Adams. S. 45° 09′, W. 120° 56′	29.75	755.6	57	13.9	48	8.9	92	WSW	.....	.....	4	.....	.....	.....	W	0	0	Long	W	Cloudy	
Alliance, Messina, Sicily	29.95‡	760.7‡	.....	.....	76	24.4	50	NNW	.....	.....	2	.....	5	.....	NW	.....	.....	None	.....	Pleasant	
Ashuelot. Yokohama, Japan	30.16	766.1	68	20.0	65	18.3	89	SSE	.....	.....	2	.....	2	.....	Calm	.....	.....	Smooth	.....	Clear	
Alaska, Talcahuano, Chili	30.10	764.5	58	14.4	51	10.6	53	NNE	.....	.....	4	.....	10	.....	SW	0.35	8.9	Long	NW	Misty	
Colorado. New York, N. Y.	30.49‡	774.4‡	.....	.....	49	9.4	63	NNE	20	8.9	.....	.....	8	.....	NW	0.05	1.3	.....	.....	Hazy	
Constitution, Havre, France	30.17‡	766.3‡	.....	.....	62	16.7	94	W	.....	.....	2	.....	8	.....	WNW	.....	.....	.....	.....	Cloudy	
Despatch, Volo, Turkey	29.82‡	757.4‡	.....	.....	78	25.6	57	NNW	.....	.....	2	.....	5	.....	NE	.....	.....	.....	.....	Fair	
Essex, S. 30° 53′, W. 40° 10	30.25	768.3	62	16.7	61	16.1	94	S	.....	.....	5	.....	5	.....	S	.....	.....	Long	S	Fair	
Franklin, Norfolk, Va.	30.45	773.4	65	18.3	63	17.2	72	NE	8.4	3.8	.....	.....	8	.....	ESE	0	0	.....	.....	Fair	
Gettysburg N. 36° 12′ W. 4° 05′	29.96‡	761.0‡	.....	.....	79	26.1	91	E	.....	.....	3	.....	1	.....	.....	0	0	Smooth	.....	Clear	
Guard, Bahia, Brazil	30.06	763.5	78	25.6	77	25.0	77	E	....	.....	2	.....	8?	.....	ENE	.....	.....	.....	.....	Clear?	
Hartford, Rio de Janeiro, Brazil	30.19	766.8	.....	.....	70	21.1	66	SSE	6.0	2.7	.....	.....	10	.....	S	0	0	.....	.....	Cloudy	
Marion, Naples, Italy	30.00	762.0	73	22.8	75	23.9	58	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	30.16†	766.1†	.....	.....	48	8.9	63	ESE	.....	.....	6	.....	5	.....	.....	.....	.....	.....	.....	Fair	
Monocacy. Yokohama, Japan	30.12‡	765.0‡	.....	.....	65	18.3	100	SSW	.....	.....	1	.....	1	.....	SSW	.....	.....	.....	.....	Clear	
New Hampshire, Port Royal, S. C.	30.38†	771.6†	.....	.....	66	18.9	89	NNE	29	13.0	.....	.....	10	.....	ESE	0.13	3.3	.....	.....	Cloudy	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	64	17.8	83	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.53	775.4	49	9.4	49	9.4	100	NE	.....	.....	2	.....	2	.....	NW	.....	.....	.....	.....	Clear	
Palos, Tientsin, China	30.00	762.0	67	19.4	62	16.7	83	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, Portsmouth, N. H.	30.44‡	773.2‡	.....	.....	44	6.7	68	NW	1.2	0.5	.....	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China	30.09	764.3	87	30.6	85	29.4	87	ENE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.96	761.0	78	25.6	77	25.0	95	E	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.39‡	771.9‡	.....	.....	53	11.7	67	NE	.....	.....	4	.....	10	.....	NW	0	0	.....	.....	Cloudy	
Saratoga, Philadelphia, Pa.	30.36*	771.1*	.....	.....	47	8.3	77	N	.....	.....	4	.....	0	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.35	770.9	52	11.1	53	11.7	67	NE	6	2.7	.....	.....	8	.....	NE	0	0	.....	.....	Cloudy	
Supply, Havre, France	30.22	767.6	65	18.3	64	17.8	83	W	.....	.....	1	.....	8	.....	W	.....	.....	.....	.....	Cloudy	
Swatara, Boston, Mass.	30.48‡	774.2‡	.....	.....	47	8.3	77	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Trenton, N. 47° 32′, W. 11° 16′	30.06‡	763.5‡	.....	.....	60	15.6	88	S	.....	.....	3–4	.....	10	.....	W	0	0	Smooth	.....	Misty	
Tuscarora, La Paz, Mexico	29.70	754.4	80	26.7	81	27.2	78	S	.....	.....	0–1	.....	2	.....	Calm	0	0	.....	.....	Clear	
Vandalia, Barcelona, Spain	30.04‡	763.0‡	.....	.....	73	22.8	81	S	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	30.51‡	774.9‡	.....	.....	44	6.7	68	NW	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.			Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From -	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, Ulsaloddy, W. T.		29.53*	750.0*				SE			4		10						Showery	Capt. Seabury.
S. S City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 16° 9′, W. 95° 50′		29.96†	761.0†	83	28.3	100	N			3		7		ENE	0	Mod'ate	Confused	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 43° 58′, E. 179° 14′		30.25*	768.3*	54	12.2	80	NNE			4		n		E		Mod'ate	NE	Misty	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		30.12†	765.0†				SE			3		n			Heavy			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 40′, W. 178° 39′		30.34	770.6	70	21.1	95				3		6		SW		3	W	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 56′, W. 10° 33′		30.09	764.3	62.5	16.9	80	SW			3-4		9		WSW	3 hours	2	WNW	Overcast	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				67	19.4	95	W			1		8		WNW	Light			Light rain	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.49	774.4	58	14.4	82	N			3		3		N	0			Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 47' W. 46° 47'		29.92*	760.0*				S	20	8.9			10		SW		Heavy	NE	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 18° 26', W. 65° 06'		29.87	758.7	85	29.4	76	ESE	11	4.9			2k		E	0	Swell	NE	Clear	Capt. James Jorgen sen.
Schooner Florence																			O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., *fg.* and *sm'e*, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 29, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.07	763.7	68.4	20.2	72	NE	.....	.....	5	.....	1	.....	.....	0	0	Very fair	Dr. Ollive.
Nemours	.....	.....	30.04	763.0	75.2	24.0	85	NW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Kesxuche.
Algiers	.....	.....	29.96	761.0	78.4	25.8	70	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Tourliere.
La Calle	.....	.....	30.04	763.1	72.6	22.6	68	ENE	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair	Foufrede.
Tunis	.....	.....	30.01	762.3	79.2	26.2	73	ENE	.....	.....	5	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.16	766.0	80.6	27.0	.....	NE	.....	.....	3	.....	0	.....	.....	0	0	Clear	Gau.
Saida	.....	.....	29.97	761.3	85.3	29.6	17	W	.....	.....	1	.....	2	.....	.....	0	0	Fair	Herbin.
Tebessa	.....	.....	30.03	762.7	78.8	26.0	36	W	.....	.....	5	.....	3	.....	.....	0	0	Pretty fair	Watrin.
Geriville	.....	.....	30.02	762.6	80.2	26.8	38	S	.....	.....	6	.....	2	.....	.....	0	0	Fair	Brugniaux.
Laghouat	.....	.....	30.13	765.4	77.7	25.4	49	Calm	.....	.....	0	.....	2	.....	.....	0	0	Fair	Bertrand.
Biskra	.....	.....	30.08	764.1	82.4	28.0	31	SE	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.54	750.2	30.08	763.9	64.8	18.2	53	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.22	742.2	29.98	761.0	56.8	13.8	78	W	.....	.....	3	.....	6	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.09	738.8	29.95	760.7	61.5	16.4	69	S	.....	.....	1	.....	9s	.....	SE	0	0	.....	Julius Mikolik.
Gratz	28.82	732.1	30.00	762.4	60.8	16.0	69	S	.....	.....	3	.....	0	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.52	724.3	29.99	761.8	55.0	12.8	64	N	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.73	729.7	30.05	763.3	60.4	15.8	61	NNE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	28.87	733.4	29.85	758.2	55.4	13.0	77	NW	.....	.....	2	.....	9	.....	.....	0.004	0.1	.....	Dr. T. Stanecki.
Pola	29.98	761.6	30.10	764.4	68.7	20.4	58	SW	.....	.....	1	.....	2cs	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.49	749.0	29.95	760.7	57.7	14.3	71	S	.....	.....	2	.....	6	.....	.....	0.012	0.3	.....	Julius Csics, S. J.
Szegedin	29.74	755.4	30.02	762.4	63.3	17.4	63	N	.....	.....	1	.....	6	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.01	762.3	30.11	764.9	69.4	20.8	76	Calm	.....	.....	0	.....	0	.....	.....	0	0	Almost clear	P. Busin.
Vienna	29.34	745.3	30.04	763.1	64.2	17.9	68	W	.....	.....	2	.....	2	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.58	725.8	30.06	763.5	62.4	16.9	67	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.84	757.9	30.04	762.9	61.9	16.6	81	WSW	.....	.....	0	.....	10	.....	NE	0	0	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. de Cae.
Maeseyck	29.93	760.1	30.06	763.4	65.7	18.7	87	S	.....	.....	2	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.97	761.2	30.07	763.8	49.5	9.7	.....	E	8	3.6	.....	.....	10	.....	.....	1.170	29.72	Overcast.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Carrick.
Armagh, Observatory	.....	.....	29.95	760.7	60.3	15.7	.....	S	5	2.2	.....	.....	.....	.....	.....	.....	.....	.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.98	761.5	65.3	18.5	.....	SE	7	3.1	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.3	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	84	28.	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.02	762.5	64.0	17.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	H. Todd. [H. C.
Cardington	.....	.....	30.04	763.0	64.4	18.0	.....	W	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast.....	John McLaren.
Chatham, School M. E.	29.91	759.7	30.04	763.0	64.7	18.2	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	Lt.Col.C.N. Martin,R.E.
Dartmoor	28.50	723.9	29.95	760.7	59.0	15.0	.....	E	.....	.....	3	.....	5	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	29.92	760.0	29.95	760.7	60	15.6	.....	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	29.99	761.7	30.02	762.5	63	17.2	.....	SSE	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded..	J. Costello.
Eccles, (near Manchester)	.....	.....	29.97	761.2	68.3	20.2	.....	SE	0.4	0.2	.....	.....	9	.....	.....	.....	.....	Gloomy.....	Thomas Mackereth.
Falmouth, Observatory	29.74	755.4	29.96	761.0	60.9	16.1	.....	ESE	.....	.....	4	.....	7	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G.Salmon, A.H.C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	80	26.7	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	Drizzling.....	
Galway, Queen's College	.....	.....	29.79	756.7	60	15.6	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.89	759.2	29.95	760.7	.....	.....	.....	E	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.80	756.9	30.00	762.0	51.5	10.8	.....	NE	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	30.02	762.5	30.03	762.7	60	15.6	.....	Calm	.....	.....	0	.....	4	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.85	758.2	30.02	762.5	63.9	17.7	.....	WSW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.98	761.5	64	17.8	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.01	762.2	64	17.8	.....	SE	.....	.....	1	.....	2ck	.....	.....	0.04	1.0	Fine.....	M. P. Moyle.
Holyhead	29.91	759.7	29.96	761.0	61	16.1	.....	WSW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.72	754.9	30.00	762.0	66.2	19.0	.....	ESE	.....	.....	2	.....	6	.....	.....	.....	.....	Gloomy.....	J. Fisher.
Kew, Observatory	30.00	762.0	30.04	763.0	66.0	18.6	.....	WSW	3	1.3	.....	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	29.95	760 7	29.98	761.5	61	16.1	.....	SSE	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	30.01	762.2	62.7	17.1	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.71?	754.6?	29.78?	756.4?	78	25.6	.....	NE	.....	.....	1	.....	3k	.....	.....	.....	.....	D. clouds....	Sergt. Beckett.
Nairn	29.90	759.4	29.99	761.7	49	9.4	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.70	754.4	79.0	26.1	.....	NE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	29.82	757.4	30.01	762.2	69.7	19.8	.....	S	.....	.....	1	.....	10k;ks;d]	.....	W;S	0	0	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.48	748.8	30.00	762.0	60.9	16.1	.....	S	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.02	762.5	62	16.7	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Overcast.....	H.E. Bellamy.
Plymouth	29.91	759.7	29.98	761.5	62.8	17.1	.....	ESE	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	29.86	758.4	29.90	759.4	57	13.9	.....	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Dull.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.07	763.8	50	10.0	.....	E	8	3.6	.....	.....	5	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.91	759.7	63.4	17.4	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Sergt. W. H. Lyne.
Sheffield	29.74	755.4	30.02	762.5	66.0	18.9	.....	SW	.....	.....	1	.....	7	.....	.....	0.66	16.8	Overcast.....	W. F. Cooper.
Silloth, Rectory	29.95	760.7	29.98	761.5	58.2	14.6	89	Calm	.....	.....	0	.....	10	.....	.....	0.045	1.13	Overcast.....	C. Edith Redford.
Stonyhurst, Observatory	29.59	751.6	30.00	762 0	63.8	17.7	.....	SSW	.....	.....	0?	.....	10	.....	.....	.....	.....	Misty.....	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.82	757.4	30.04	763.0	65.0	18.3	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	30.06	763.5	51	10.6	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	John Trotter.
Truro, Royal Institution	.....	.....	29.96	761.0	64	17.8	.....	SE	.....	.....	7	.....	7	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	29.83	757.7	29.85	758.2	60.7	15.9	.....	ESE	22	9.8	.....	.....	10	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.72	754.9	48.0	8.9	82	NW	.....	.....	3	.....	0	.....	.....	0	0	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.94	760.5	30.14	765.4	74.4	23.6	61	E	22.0	9.8	.....	0	4	.....	E	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.86	758.4	29.95	760.7	50.8	10.2	76	SE	5	2.2	.....	.....	1	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach Light-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 45′, W. 59° 10′	2	NNW	D. clouds....	Capt. W. Waring.
Barque Margaret Smith, N. 20° 0′, W. 44° 35′	.....	E	D. clouds....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 44° 55′, W 31° 20′	4	SSW;NW	D. clouds....	Capt. Alex Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.21	665.7	.....	.....	68.9	20.5	92	SE	.....	.....	1	.....	10n	.....	.....	1.0	25.	.....	Federico Maison
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.80	756.9	29.85	758.1	55.9	13.3	52	NW	.....	.....	4	.....	5	.....	.....	.....	.....	.....	.....
Faröe	29.93	760.2	29.95	760.7	54.1	12.3	70	WNW	.....	.....	6	.....	9	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.13	765.3	30.17	766.2	46.6	8.1	63	NE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....
Vestervig	29.69	754.2	29.86	758.5	54.0	12.2	84	NW	.....	.....	6	.....	4	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.62	749.3	30.07	763.8	60.8	16	87	E	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Colignon, Director.
Amiens, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bonvallet, Director.
Avignon, Normal School	29.92	760.0	30.09	762.0	77.0	25	46	ENE	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.47	748.4	30.01	762.3	66.7	19.3	53	E	.....	.....	2	2c	.....	.....	.....	0	0	Slightly cl'dy	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.79	756.6	30.07	763 8	64.4	18	63	E	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.17	741.0	30.06	763.5	57.9	14.4	64	E	.....	.....	2	.....	1	.....	N	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Marlot, Director.
Bourges, Normal School	29.46	748.2	30.00	762.0	65.3	18.5	57	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.63	752.6	29.87	758.7	74.1	23.4	60	SE	.....	.....	1	.....	2	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.62	752.3	30.02	762.6	71.6	22	58	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Normal School.
Chartres, Normal School	29.47	748.6	30.03	762.7	74.5	23.6	72	E	.....	.....	4	.....	2	W	W	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.72	754.8	30.03	762.7	68.9	20.5	78	SE	.....	.....	1	.....	5	SW	SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.63	727.1	29.92	760.0	78.6	28.1	47	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Alluard, Director.
Commercy, Normal School	29.24	742.8	30.13	765.2	54.7	12.6	86	NW	.....	.....	1	.....	10cn	.....	NW	0	0	Covered	Dr. Coulet, Director.
Commune de Grèasque*	28.98	736.0	30.12	765.0	76.3	24.6	50	E	.....	.....	2	.....	2	E	.....	0	0	¾ covered	M. Kina.
Grenoble, Normal School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.80	757.0	30.01	762.2	74.5	23.6	98	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	Monillot, Director.
Le Mans, Normal School	29.71	754.7	30.01	762.3	66.0	18.9	56	SE	.....	.....	4	.....	0	.....	.....	0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.15	740.3	30.05	763.2	59.0	15	89	SW	.....	.....	1	.....	5	.....	SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. Carré, Director.
Mâcon, Normal School	30.07	763.6	30.10	764.4	60.8	16	100	NNE	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.03	737.4	30.08	763.9	55.8	13.2	88	N	.....	.....	1	.....	8n	.....	N	0	0	Very cloudy	M. Barbier, Director.
Nismes, Normal School	29.84	757.9	30.02	762.4	70.5	26.4	72	S	.....	.....	1	.....	k	N	.....	0	0	.....	Boyer, Director.
Privas, Normal School	29.03	737.4	30.06	763.5	74.3	23.5	37	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.22	640.6	.....	.....	57.2	14.0	55	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Alluard, Director.
Rochefort, Naval Obs'y	29.93	760.2	29.96	761.0	72.1	22.3	63	ESE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.94	760.4	30.02	762.5	69.4	20.8	57	W	.....	.....	1	.....	2	.....	E	0	0	Slightly cl'dy	P. Lucard, Director.
Saint Malo (Port)	.....	.....	29.99	761.7	68.2	20.1	65	SE	.....	.....	2	.....	1	.....	SE	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.87	758.7	30.04	762.9	65.8	18.8	65	ENE	.....	.....	1	.....	3	.....	.....	0	0	.....	E. Renou.
Tarbes, Normal School	28.89	733.9	29.94	760.5	71.6	22	58	SE	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.79	756.6	29.82	757.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchés.
Lyons	.....	.....	29.74	755.4	75.6	24.2	38	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.04	762.9	75.0	23.9	60	SSW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	The Staff.
Mont-Louis	24.97	634.3	30.29	769.3	63.7	17.6	18	SSE	.....	.....	3	.....	3	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	30.09	764.2	70.2	21.2	83	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.74	755.5	30.02	762.5	66.6	19.2	65	ENE	.....	.....	2	.....	4	.....	ENE	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.04	763.0	67.6	19.8	77	E	7.4	3.33	.....	.....	5	.....	NW	0	0	.....	Dr. Pines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.65	575.3	.....	.....	58.6	14.8	.....	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.28	743.8	30.00	762.1	72.5	22.5	48	SSE	.....	.....	4	.....	0	.....	.....	0	0	.....	The Staff.
Tours	29.562	750.9 ?	29.762	755.9 ?	69.4	20.8	51	ESE	.....	.....	2	.....	0	.....	.....	0	0	Clear	C. Marquet.
Versailles	.....	.....	30.03	762.8	66.6	19.2	53	SE	.....	.....	2	.....	7	.....	.....	0	0	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.00	762.1	30.03	762.7	68.0	20.0	100	E	3.4	1.5	.....	.....	4k	.....	.....	0.024	0.6	Cloudy	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per sec.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.18	741.1	30.02	762.5	62.1	16.7	72	W			3		7	W		0	0		Prof. Dr. Hoh.
Berlin	29.83	757.6	30.00	761.9	61.0	16.1	59	W			1		7			0	0		Prof. Arndt.
Breslau	29.48	748.7	30.01	762.2	60.8	16.0	57	NW			4		7			0	0		Royal University Obs'y
Carlsruhe	29.61	752.2	30.03	762.8	64.4	18.0	65	E			1		4			0	0		Albert Senz.
Cassel	29.45	747.9	30.06	763.4	62.2	16.8	77	NW			2		10	SW		0.376	1.90		Dr. H. Möhl.
Crefeld	29.86	758.4	30.02	762.5	67.6	19.8	71	W			1		8			0	0	Dust-Haze.	Director Lose.
Emden	30.06	763.5	30.10	764.4	59.7	15.4	70	N			2		5			0	0		Prof. Prestel.
Frankfort on the Main	29.71	754.5	30.06	763.5	67.1	19.5		SSW			2		4			0	0		Physical Society.
Friedrichshafen	28.65	727.8	30.09	764.2	56.5	13.6	86	SW			1		0			0	0		M. Wilhelm.
Hamburg	29.94	760.4	30.01	762.2	56.5	13.6	62	WNW			3		5?			0.008	0.2	Fair	Captain F. Hegemann.
Kiel	29.97	761.2	29.98	761.6	56.3	13.5	89	WNW			3		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.67	763.5	29.75	755.6	56.3	13.5	64	NW			7		9			0.126	3.2		Prof. E. Luther.
Köslin			29.84	757.9	55.0	12.8		W			4		3			0	0		H. Müller.
Leipsic, Observatory	29.62	752.4	30.04	763.0	58.3	14.6	89	SW			1		10			0.028	0.7	Rainy	Prof. Bruhns.
Memel, Naval School	29.64	752.9	29.69	754.1	56.3	13.5	61	WNW			6		4s						Reinbrecht and Skalweit.
Neufahrwasser	29.80	756.8	29.81	757.2	56.5	13.6	60	WNW			5		7			0	0		A. Lothes.
Posen	29.71	754.5	29.99	761.8	59.2	15.1	58	NW			6		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.53	750.0	30.07	763.8	62.2	16.8	74	Calm			0		3			0	0		Astronomical Observatory.
Stuttgart	29.12	739.6	30.04	763.0	63.7	17.6	61	NE			1		4	W		0	0		Prof. Schoder.
Treves, (Trier)	29.41	746.9	29.93	760.1	66.2	19.0	59	W			2		6			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.59	726.1	30.08	764.0	62.6	17.0	58	NNW	0.7	0.3			7ck		SW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.93	760.2	29.97	761.2	52.5	11.4	73	NW			4		8			0.268	6.8		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.55	750.6	29.93	760.3	76.3	24.6		NE			1.0							⅓ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.75	755.7	29.80	757.0	86.3	30.2	65	SW	17?	7.6?			1			0	0	D. clouds	
Deesa	29.33	745.0	29.80	756.8	92.2	33.4	44	NW					1	E		0	0	D. clouds	
Bombay	29.69	754.0	29.72	755.0	82.2	27.9	74	N	8	3.6			9	E	SE	0.04	1.0	D. clouds	
Poona	27.78	705.6	29.77	756.2	80.4	26.9	69	NNE					10		NNE	0.10	2.5	Overcast	
Lahore	29.00	736.6	29.72	755.0	92.1	33.4	36	N	0.2	0.1			0			0	0	Blue sky	
Belgaum	27.23	691.6	29.75	755.7	77.6	25.3	75	NNE	3	1.3			9	ESE;E		0.25	6.4	D. clouds	
Roorkee	28.84	732.6	29.73	755.1	85.8	29.9	68	Calm	2	0.9			0			0	0		
Agra	29.19	741.4	29.74	755.4	92.6	33.7	47	N								0	0		
Nagpur	28.71	729.3	29.75	755.5	83.6	28.7	72	E	3.1	1.4			10		W	0	0	Drizzling	
Lucknow																			
Allahabad	29.42	747.2	29.72	755.0	86.9	30.5	79	Calm	1.1	0.5			1			0	0	D. clouds	
Patna	29.55	750.7	29.73	755.2	87.0	30.6	80	Calm	0.6	0.3			2	E	E	0	0		
Hazaribagh	27.76	705.0	29.76	756.0	76.3	25.7	83	S	5.1	2.3			8			0.66	16.8	Thunder-storm	
Cuttack	29.08	738.8	29.76	755.9	82.0	27.8	87	E	1.9	0.8			6			0.13	3.3	Drizzling	
Calcutta (Alipore)	29.75	755.6	29.77	756.1	81.8	27.7	91	S	1.0	0.4			2			0	0	D. clouds	
Goalpara	29.36	745.6	29.74	755.4	83.4	28.6	72	Calm	2.3	1.0			0			2.08	52.8	Blue sky	
Chittagong	29.70	754.5	29.80	756.8	82.9	28.3	89	Calm	0.6	0.3			6			0	0	Misty	
Sibsagar	29.43	747.6	29.76	756.0	83.5	28.6	81	Calm	0.7	0.3			4			0	0	Blue sky	
Jubbulpore	28.45	722.5	29.79	756.8	86.8	30.4	59	Calm	0.8	0.4			8			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—.	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Udine	29.72	754.9	30.12	765.1	67.1	19.5	62	SW	1.8	0.8			5			0	0		Prof. Giovanni Clodig.
Padua	29.99	761.7	30.10	764.4	69.8	21.0	62	S	1.3	0.6			4	WSW		0	0		Prof. Dott. Lorenzoni
Vicenza	29.90	759.4	30.09	764.2	69.4	20.8	56	N	2.5	1.1			4	W		0	0		Cont. Alm. Da Schio.
Bergamo	28.78	731.0	30.07	763.6	70.2	21.2	57	SSW			2		4			0	0		Prof. Trionfini Carlo.
Milan	29.59	751.5	30.09	764.8	65.8	18.5	67	E			2		4	E		0	0		Prof. Schiaparelli.
Moncalieri	29.30	744.3	30.07	763.8	69.6	20.9	64	NNW	2.5	1.1			4	NE		0	0		Prof. P. F. Denza.
Mondovi	28.19	715.9	30.06	763.5	64.8	18.2	71	NW			4		6			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.86	758.5	30.08	764.0	72.3	22.4	72	SW			2		2			0	0		Prof. L. Vassallo.
Genoa	29.91	759.8	30.08	764.0	72.3	22.4	71	SW			2		2	W		0	0		Prof. G. M. Garibaldi.
Parma	29.79	756.6	30.10	764.6	71.4	21.9	55	SSE			2		1			0	0		Prof. P. Pigorini.
Florence	29.62	752.4	30.07	763.8	74.3	23.5	50	NW			2		0			0	0		Cav. F. Meucci
Leghorn	29.93	760.3	30.02	762.4	71.6	22.0	73	W	3.8	1.7			0			0	0		Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.58	725.9	30.10	764.5	63.3	17.4	65	SE			1		0			0	0		Prof. P. Serpieri
Rome	29.91	759.7	30.08	764.1	76.1	24.5	60	SW	3.1	1.4			4			0	0		Prof. P. G. S. Ferrari.
Naples, O. U.	29.89	759.3	30.09	764.3	76.3	24.6	37	SSW			2		1			0	0		Prof. L. Palmieri.
Lecce	29.80	756.8	30.04	763.1	68.5	20.3	53	NNW	17.3	7.8			2			0	0		Prof. C. De Giorgi.
Cagliari	29.85	758.2	30.04	763.0	73.9	23.3	71	SE			2		0			0	0		Prof. A. Pacinotti.
Cosenza	29.19	741.4	30.10	764.4	73.0	22.8	71	SW	1.3	0.6			4			0	0		Prof. F. D. Conti.
Palermo	29.83	757.7	30.08	764.0	72.3	22.4	65	NE	4.8	1.9			1			0	0		Prof. G. Cacciatore.
Syracuse	30.02	762.4	30.09	764.2	72.5	22.5	65	ESE	12.5	5.6			3	WSW		0	0		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	29.66	750.9	30.12	765.0	73.9	23.3	50	ESE	0.7	0.3			2	S		0	0		Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.82	757.4	30.02	762.5	67.3	19.6	94	NNE	0.3	0.1			2s			0.021	0.54	Fair	I. Arai, Director.
Tokei (Yeddo) Observatory	29.99	761.7	30.06	763.5	64.2	17.9	83	NNE	4.0	1.8			10s			0	0	Cloudy	Prof. P. V. Veeder.
Tokei (Yeddo) University																			

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					63.0	17.2	65	N			4	0	2ks		NW	0	0	Clear	P. Ceballos.
Guadalajara	25.07	636.8	30.02	762.4	59.9	15.5	76	SE			1	0	9k		NE	0	0	Very cloudy	Prof. L. Perez.
Guanajuato																			F. Ortiz.
Leon	24.43	620.7	30.00	762.0	57.9	14.4	78	NNW			4	0	0			0	0	Blue sky	Prof. M. Leal.
Mexico	23.11	587.1	30.14	765.6	51.6	10.9	81	Calm	0	0		0	1k			0	0	Clear	Central Observatory.
Pabellon, (Aguascalts)					59.5	15.3	70	Calm			0	0	1s			0	0	Clear	M. V. de Leon, M. E.
Puebla	23.34	592.9	30.02	762.5	48.7	9.3	83	E				0	0			0.85	21.53	Blue sky	Prof. B. Gonzalez.
Tlacotalpam	29.89	759.2	29.99	759.5	77.7	25.4	91	W			2	2ck	2k	NW	NW	0.020	0.5	Fair	M. M. Cházaro.
San Luis Potosi	24.20	615.6	30.19	766.7	54.0	12.2	45	E				1	2	W	E	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.95	760.6	29.98	761.3	78.8	26.0	87	NW	2.9	1.3		0	8ks			Inap.	Inap.	Cloudy	Prof. J. Rossell.
Zacatecas					59.0	15.0	78	NE			2	4	2	SW	NE	0	0		J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.5	30.00	762.2	47.5	8.6	88	SE	0	0		0	0			0.807	20.50	Clear	Prof. P. Spina.
Durango																			M. V. de Leon, C. E.
Colima	28.35	720.1	29.97	761.2	79.7	26.5	85	SE	0.8	0.4		0	8		N	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam																			Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.04	763.1	30.04	763.1	64.0	17.8		W			3					0	0		
Groningen	29.99	761.8	30.05	763.2	57.9	14.4		N			1					0	0		
Helder	30.04	762.9	30.04	762.9	60.1	15.6		NNE			1								
Hellevoetsluis	30.01	762.3	30.01	762.3	61.9	18.3	86	NW			1					0	0	Dull	H. v d Brink.
Utrecht	30.00	762.0	30.05	763.2	60.3	15.7	88	WNW			2		10						

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.84	757.9	29.89	759.3	50.0	10.0	67	NNW	16.6	7.4	.....	.....	2	.....	.....	0	0	.....	
Brönö	29.64	752 8	29.68	753.8	46.8	8.2	73	SW	9	4	.....	.....	8	.....	.....	0.370	9.4	.....	
Christiania	29.58	751.4	29.73	755.1	49.8	9.9	64	W	11	5	.....	.....	6	.....	.....	0.083	2.1	Raining	
Tromsö	29.71	754.5	29.75	755.6	43.9	6.6	51	NE	13	6	.....	.....	5	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.02	762.5	30.21	767.3	69.4	20.8	71	NW	3.1	1.4	.....	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.99	736.3	29.98	761.5	76.6	24.8	40	SSW	8.1	3.6	.....	.....	8	NW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.03	762.7	30.11	764.9	74.5	23.6	60	SW	4.9	2.2	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.66	753.4	30.02	762.4	67.6	19.8	70	SSW	9.8	4.4	.....	.....	7	WSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.15	765.8	30.22	767.6	70.5	21.4	62	NE	4.3	1.9	.....	.....	4	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.89	759.2	78.8	26.0	.....	W	.....	.....	3	.....	2	.....	W	1	.....	D. clouds	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 14° 00′, E. 12° 12′	.....	.....	30.00	762.0	78.8	26.0	.....	SW	.....	.....	4	.....	8	.....	SW	4	SW	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.95	760.8	87.3	30.7	.....	NE	.....	.....	2	.....	3	.....	NE	2	SSE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.51?	749.6?	84.6	29.2	.....	Calm	.....	.....	0	.....	0	.....	.....	0	.....	Blue sky	M. T. Guimarães, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.89	759.2	55.2	12.9	66	WNW	13	6	.....	.....	10n	.....	.....	.....	.....	Raining	Astronomical Obs.
Wilna	29.30	744.2	29.71	754.7	54.7	12.7	77	W	2	1	.....	.....	8	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.25	744.0	29.53	750.1	54.1	12.3	83	SSW	7	3	.....	.....	7k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.52	749.8	29.54	750.2	55.8	13.2	80	SSW	9	4	.....	.....	8km	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.11	739.3	29.73	755.2	55.8	13.2	76	NNW	11	5	.....	.....	10cs;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.69	754.1	29.76	755.9	59.0	15.0	91	NNW	22	10	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.64	752.8	29.66	753.3	72.0	22.2	82	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.16	740.7	29.70	754.4	55.6	13.1	88	S	7	3	.....	.....	10s	.....	.....	.....	.....	Light rain	Meteorological Obs.
Lugan	29.52	749.7	29.71	754.7	50.4	26.9	38	SE	22	10	.....	.....	5ck	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.92	760.0	29.94	760.5	40.8	4.9	90	E	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.47	723.0	29.83	757.7	71.1	21.7	56	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.04	762.9	29.95	760.8	71.1	21.7	50	ESE	18	8	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.51	749.5	29.97	761.1	64.6	18.1	32	S	9	4	.....	.....	0	.....	.....	.....	.....	.....	Cand. Futjanow.
Kasan	29.74	755.3	30.00	762.0	65.3	18.5	37	SSW	9	4	.....	.....	2	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.21	742.0	30.20	767.1	32.5	0.2	94	ENE	7	3	.....	.....	10	.....	.....	.....	.....	Snowing	Meteorological Obs
Nukuss	29.89	759.2	30.12	765.0	68.0	20.0	52	NE	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	
Tashkend	28.43	722.2	30.11	764.8	64.4	18.0	68	Calm	0	0	.....	.....	5	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.59	751.6	30.13	765.2	37.6	3.1	56	NW	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.67	753.6	29.97	761.2	34.0	1.1	70	NNE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.72	754.9	29.86	758.5	64.9	18.3	91	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.89	759.2	29.90	761.8	75.6	24.2	62	SSW	2.2	1.00	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.84	757.8	29.89	759.2	86.4	30.2	47	S	2.5	1.12	.....	.....	0	.....	.....	0	0	Clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.06	687.4	.....	.....	80.6	27.0	64	NE	3.7	1.64	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.78	705.7	29.80	756.9	85.1	29.5	38	SW	6.6	2.94	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.86	758.5	30.01	762.2	82.4	28.0	47	ENE	2.6	1.17	.....	.....	.....	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.04	737.6	29.92	760.0	63.1	17.3	80	SW	11.8	5.28	.....	.....	10	.....	.....	0	0	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.71	754.7	29.78	756.4	81.3	27.4	82	NNE	10.1	4.5	.....	0	5k;ks	.....	NE	0.091	2.3	Fair	Benito Vines, S. J
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.90	759.4	29.99	761.8	81.7	27.6	47	SSE	17.8	8.0	.....	3	4	E	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	29.79	756.6	29.88	758 9	83.1	28.4	91	SE	4.5	2.00	.....	2s	5k	SE	SE	0	0	Cloudy	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.64	752.9	29.68	753.9	42.1	5.6	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	
Umea	29.66	753.4	29.71	754.5	41.7	5.4	75	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.65	753.1	29.70	754.4	42.1	5.6	73	N	.....	.....	2	.....	9	.....	.....	0.039	1.0	.....	
Stockholm	29.45	747.9	29.62	752.4	48.0	9.4	74	NNW	.....	.....	4	.....	10	.....	.....	0.213	5.4	.....	
Wisby	29.57	751.1	29.63	752.6	51.8	11.0	76	NNW	.....	.....	6	.....	7	.....	.....	0.008	0.2	.....	
Sub-Series.																			
Upsala	29.56	750.8	29.63	752.7	46.0	7.8	86	NNW	14.8	6.4	.....	.....	10	.....	N	0.039	1.00	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	727.7	30.00	763.4	60.4	15.8	75	N	.....	.....	1	.....	0	.....	.....	0	0	Clear	The Observatory.
Zurich	28.45	722.6	30.07	763.6	60.4	15.8	74	W	.....	.....	.....	.....	1	.....	.....	0	0	Clear	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.1 mm.; Thermometer, —0.2 cent.; Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.95	760.8	63.1	17.3	63	NNW	18	8.0	.....	10	.....	NNW	.....	0.094	2.4	.....	The Observatory.
Valona	.....	.....	30.14	765.6	68.5	20.3	.....	NW	.....	.....	2	0	.....	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.87	758.6	83.5	28.6	61	W	.....	.....	3	.....	10k;n	.....	NW;S	0	0	Overcast	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.93	760.2	30.28	767.8	56	13.3	.....	Calm	0	0	.....	0	5s	.....	E	0	0	Fair	W. R. Rigg.
*Chatham, N B	30.17	766.3	30.24	768.1	46	7.8	73	W	8	3.6	.....	5ck	2ks	NW	NW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.10	764.5	30.14	765.5	52	11.1	64	W	10	4.5	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	30.02	762.5	30.22	767.6	40.0	4.4	92	E	.....	.....	1	0	7s	.....	.....	0	0	Fair	James Smith, M. A
Dalhousie, N. B	30.09	764.3	30.25	768.3	49	9.4	78	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.03	0.8	.....	W. H. Rovis.
*Father Point, Quebec	30.21	767.3	30.23	767.8	45	7.2	82	W	15	6.7	.....	5cs	2s	N	NW	0	0	Fair	J. McWilliams.
Fredericton, N. B	30.24	768.1	30.30	769.6	48.0	8.9	64	NW	6	2.7	.....	cs	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	28.77	730.7	29.59	751.6	45	7.2	96	S	4	1.8	.....	5k	Sm'e	W	S	0	0	Smoky	James Stewart.
Granton, Ontario	29.04	737.6	30.15	765.8	50	10.0	100	Calm	.....	.....	0	5cs	0	NE	.....	0	0	Fair	James Grant.
*Halifax, N. S	30.00	763.5	30.20	767.1	51	10.6	71	NW	9	4.0	.....	2cs	0	.....	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.84	757.9	30.22	767.6	47.7	8.7	88	SE	.....	.....	1	8cs	0	SW	.....	0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	29.59	751.6	29.62	752.3	43	6.1	71	NW	.....	.....	5	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.23	767.8	54	12.2	93	S	9	4.0	.....	8cs	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	29.92	760 0	29.96	761.0	57.0	13.9	53	NW	18	8.0	.....	4k	0	NW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	30.08	764.0	30.28	769.1	47	8.3	89	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	29.49	749.0	30.20	767.1	44	6.7	92	E	7	3.1	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.21	767.3	50.7	10.4	85	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.49	749.0	30.18	766.6	55	12.8	100	S	5	2.2	.....	.....	10n	.....	S	0	0	Threatening	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.51	749.5	30.16	766.1	53	11.7	94	N	4	1.8	.....	.....	10n	.....	NE	0.01	0.3	Cloudy	M. Payne.
*Quebec, Quebec	30.01	762.2	30.34	770.6	45	7.2	84	Calm	.....	.....	0	2c	2s	Calm	.....	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.78	756 4	30.25	768.3	36	2.2	95	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	30.25	768.3	30.30	769.6	47	8.2	72	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	30.12	765.0	30.29	769.4	50	10.0	58	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.44	747.8	30.16	766.1	49	9.4	81	SE	6	2.7	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.88	733.5	30.17	766 3	47.0	8.3	84	SE	5	2.2	.....	1cs	4s	Calm	.....	0	0	Fair	C. J. MacGregor, M. A.
*Sydney, C. B	29.96	761.0	29.99	761.7	54	12.2	52	NW	16	7.2	.....	2k	0	NW	.....	0.04	1.0	Clear	T. C. Hill.
*Toronto, Ontario	29.82	757.4	30.20	767.1	49	9.4	88	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42.0	5.6	91	SW	.....	.....	.....	4k	4s	.....	.....	0.05	1.3	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0 10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	30.09	764.3	30.32	770.1	42	5.6	91	NW	3	1.3	.....	2ck	5s	W	W	0	0	Fair	
Alpena, Michigan	29.44	747.8	30.09	764.3	53	11.7	86	Calm	0	0	.....	10ck	0	Calm	.....	0	0	Cloudy	
Atlantic City, New Jersey	30.28	769.1	30.30	769.6	57	13.9	75	NE	10	4.5	.....	8k	0	NE	.....	0	0	Fair	
Augusta, Georgia	30.01	762.2	30.19	766.8	63	17.2	72	N	6	2.7	.....	0	Haze	.....	.....	0.03	0.8	Clear	
Baltimore, Maryland	30.26	768.6	30.31	769.9	56	13.3	75	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Barnegat, New Jersey	30.29	769.4	30.31	769.9	61	16.1	71	E	6	2.7	.....	8c	2s	W	W	0	0	Cloudy	
Bismarck, Dakota	27.73	704.3	29.59	751.6	61	16.1	82	SE	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
Boerne, Texas	28.54	724.9	.....	.....	74	23.3	76	S	3	1.3	.....	5k	0	SE	.....	0	0	Fair	
Boise City, Idaho	26.90	683.2	29.86	758.4	45	7.2	84	SE	4	1.8	.....	0	5s	.....	SW	Inap.	Inap.	Fair	
Boston, Massachusetts	30.21	767.3	30.37	771.4	49	9.4	67	W	1	0.4	.....	7ck	Haze	NW	Calm	0	0	Fair	
Brackettville, Texas	28.80	731.5	29.79	756.7	74	23.3	86	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.64	727.4	29.58	751.3	61	16.1	100	SE	20	8.9	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Brownsville, Texas	29.89	759.2	29.95	760.7	76	24.4	95	Calm	0	0	.....	5k	0	S	.....	0	0	Fair	
Buffalo, New York	29.49	749.0	30.19	766.8	54	12.2	87	S	6	2.7	.....	10k	0	SW	.....	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	30.08	764.0	30.35	770.9	47	8.3	70	S	4	1.8	.....	8c	Haze	W	Calm	0	0	Fair	
Cairo, Illinois	29.67	753.6	30.05	763.3	68	20.0	90	SE	6	2.7	.....	2ck	5s	S	S	0.17	4.3	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	52	11.1	53	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.15	638.8	29.95	760.7	60	15.6	29	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.56	674.6	30.03	762.7	68	20.0	34	SW	.....	.....	4	0	0	.....	.....	0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	50	10.0	80	SW	4	1.8	.....	.....	Fog	.....	SW	0	0	Foggy	
Cape Hatteras, N. Carolina	30.17	766.3	30.17	766.3	71	21.7	75	NE	30	13.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Henry, Virginia	30.22	767.6	30.24	768.1	68	20.0	70	NE	18	8.0	.....	0	5s	.....	S	0	0	Fair	
Cape Lookout, N. Carolina	30.13	765.3	30.14	765.5	69	20.6	85	NE	24	10.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.27	768.8	30.30	769.6	60	15.6	76	E	9	4.0	.....	8cs	0	W	.....	0	0	Cloudy	
Castroville, Texas	29.16	740.7	29.84	757.9	76	24.4	86	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.08	764.0	30.14	765.5	65	18.3	89	N	12	5.4	.....	.....	10s	.....	NE	0.09	2.3	Cloudy	
Cheyenne, Wyoming	23.79	604.3	29.73	755.1	43	6.1	36	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.34	745.2	30.01	762.2	63	17.2	89	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cincinnati Ohio	29.52	749.8	30.16	766.1	63	17.2	89	E	1	0.4	.....	.....	10n	.....	W	0.19	4.8	Light rain	
Cleveland, Ohio	29.45	748.0	30.17	766.3	56	13.3	94	S	3	1.3	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	
Coleman City, Texas	28.27	718.0	29.73	755.1	69	20.6	90	S	8	3.6	.....	0	8s	.....	S	0	0	Fair	
Columbus, Ohio	29.31	744.5	30.14	765.5	60	15.6	88	S	3	1.3	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Concho, Texas	27.97	710.4	29.57	751.1	72	22.2	85	S	12	5.4	.....	8k	0	S	.....	0	0	Cloudy	
Corsicana, Texas	29.51	749.5	29.96	761.0	72	22.2	100	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.34	745.2	29.96	761.0	63	17.2	89	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Decatur, Texas	28.69	728.7	29.80	756.9	70	21.1	90	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.15	740.4	29.92	760.0	71	21.7	90	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.52	622.8	29.74	755.4	52	11.1	29	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	28.92	734.6	29.76	755.9	65	18.3	94	S	8	3.6	.....	0	8ks	.....	S	0.05	1.3	Cloudy	
Detroit, Michigan	29.47	748.5	30.14	765.5	54	12.2	93	W	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.14	689.3	29.31	744.5	64	17.8	94	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.25	742.9	29.92	760.0	62	16.7	88	S	8	3.6	.....	.....	Fog	.....	Calm	0	0	Foggy	
Duluth, Minnesota	29.19	741.4	29.86	758.4	56	13.3	81	SW	2	0.9	.....	.....	10s	.....	SW	0.15	3.8	Cloudy	
Eagle Pass, Texas	29.16	740.7	29.87	758.7	74	23.3	95	E	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Eastport, Maine	30.24	768.1	30.31	769.9	53	11.7	54	W	4	1.8	.....	2ck	Haze	NW	Calm	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	72	22.2	95	Calm	.....	.....	0	.....	Fog	.....	Calm	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	62	16.7	45	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.46	748.3	30.17	766.3	54	12.2	100	S	10	4.5	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
Escanaba, Michigan	29.38	746.2	30.03	762.7	53	11.7	86	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Florence, Arizona	28.37	720.6	29.97	761.2	70	21.1	53	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.42	645.7	29.49	749.0	52	11.1	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.16	639.0	30.12	765.0	67	19.4	60	W	6	2.7	.....	2k	0	S	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.38	746.2	29.89	759.2	71	21.7	90	S	8	3.6	.....	2ck	0	S	.....	0.05	1.3	Clear	
Fort Griffin, Texas	28.80	726.4	29.81	757.2	72	22.2	80	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.70	703.6	29.52	749.8	75	23.9	68	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.67	728.2	29.73	755.1	69	20.6	90	SE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.23	717.0	29.73	755.1	73	22.8	81	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.93	760.2	29.97	761.2	79	26.1	78	SE	5	2.2	.....	2k	0	SE	.....	0	0	Clear	
Graham, Texas	28.80	731.5	29.80	756.9	74	23.3	76	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.43	747.5	30.07	763.8	58	14.4	88	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Indianapolis, Indiana	29.33	745.0	30.09	764.3	65	18.3	89	SE	2	0.9	.....	.....	10s	.....	S	0.01	0.3	Threatening	
Indianola, Texas	29.93	760.2	29.96	761.0	78	25.6	86	SE	6	2.7	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.72	729.5	29.80	756.9	71	21.7	80	SE	10	4.5	.....	0	2s	.....	S	0	0	Clear	
Jacksonville, Florida	29.99	761.7	30.01	762.2	70	21.1	90	N	16	7.2	.....	.....	10s	.....	N	1.38	35.1	Cloudy	
Keokuk, Iowa	29.29	744.0	29.87	758.7	68	20.0	95	SE	12	5.4	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Key West, Florida	29.77	756.1	29.80	756.9	80	26.7	82	NE	18	8.0	.....	10cs;k	0	E;NE	.....	0	0	Threatening	
Kittyhawk, North Carolina	30.18	766.6	30.20	767.1	69	20.6	85	NE	21	9.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Knoxville, Tennessee	29.22	742.2	30.21	767.3	62	16.7	77	Calm	0	0	.....	1ck	0	NW	.....	0	0	Clear	
La Crosse, Wisconsin	29.15	740.4	29.86	758.4	63	17.2	88	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.00	660.4	30.15	765.8	51	10.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.47	748.5	29.79	756.7	77	25.0	86	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.48	621.8	29.75	755.6	47	8.3	48	S	5	2.2	.....	2c	Haze	W	Calm	0	0	Fair	
Leavenworth, Kansas	29.05	737.9	29.86	758.4	69	20.6	85	S	12	5.4	.....	5k	0	S	.....	Inap.	Inap.	Fair	
Los Angeles, California	29.59	751.6	29.93	760.2	52	11.1	79	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.59	751.6	30.14	765.5	65	18.3	89	SE	2	0.9	.....	8ck	0	S	.....	0.30	7.6	Fair	
Lynchburg, Virginia	29.61	752.1	30.30	769.6	56	13.3	81	NE	2	0.9	.....	0	8ks	.....	Calm	0	0	Cloudy	
Madison, Wisconsin	29.00	736.6	29.96	761.0	60	15.6	94	SE	4	1.8	.....	.....	Fog	.....	Calm	.....	.....	Cloudy	
Marquette, Michigan	29.30	744.2	29.99	761.7	55	12.8	74	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mason, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Memphis, Tennessee	29.78	756.4	30.09	764.3	69	20.6	90	SE	2	0.9	.....	5cs	0	SW	.....	0	0	Fair	
Milwaukee, Wisconsin	29.30	744.2	30.02	762.5	58	14.4	88	S	6	2.7	.....	8ck	1s	W	Calm	0	0	Cloudy	
Mobile, Alabama	30.03	762.7	30.08	764.0	71	21.7	80	E	12	5.4	.....	0	2s	.....	SE	0	0	Fair	
Montgomery, Alabama	29.91	759.7	30.14	765.5	67	19.4	74	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.15	740.4	30.20	767.1	58	14.4	88	Calm	0	0	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	30	— 1.1	68	NW	20	8.9	.....	0	Haze	.....	Calm	0	0	Clear	
Nashville, Tennessee	29.65	753.1	30.17	766.3	66	18.9	79	Calm	0	0	.....	2k	0	.....	.....	0.25	6.3	Foggy	
New Haven, Connecticut	30.25	768.3	30.37	771.4	48	8.9	78	NE	10	4.5	.....	5c;k	5s	NW;S	Calm	0	0	Cloudy	
New London, Connecticut	30.33	770.4	30.38	771.6	47	8.3	92	N	4	1.8	.....	5ck	2s	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	74	23.3	81	NE	10	4.5	.....	0	0	.....	.....	Inap	Inap.	Clear	
Newport, Rhode Island	30.32	770.1	30.37	771.4	54	12.2	74	Calm	0	0	.....	0k	0	W	.....	0	0	Cloudy	
New York, New York	30.19	766.8	30.37	771.4	55	12.8	73	NE	6	2.7	.....	8cs	0	S	.....	0	0	Fair	
Norfolk, Virginia	30.20	767.1	30.26	768.6	65	18.3	84	E	3	1.3	.....	8cs	Sm'e	Calm	.....	0	0	Cloudy	
North Platte, Nebraska	26.72	678.7	29.16	740.7	57	13.9	94	SE	6	2.7	.....	0	Fog	.....	Calm	0	0	Fair	
Olympia, Washington Ter.	29.38	746.2	29.41	747.0	49	9.4	93	S	6	2.7	.....	.....	10n	.....	S	0.12	3.0	Light rain	
Omaha, Nebraska	28.57	725.7	29.59	751.6	67	19.4	89	S	14	6.3	.....	0	5s	.....	S	Inap.	Inap.	Fair	
Oswego, New York	29.92	760.0	30.25	768.3	52	11.1	72	S	8	3.6	.....	10c	0	NW	.....	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Pembina, Dakota	28.82	732.0	29.62	752.3	56	13.3	94	S	12	5.4			10s		Calm	0.02	0.5	Cloudy	
Philadelphia, Pa	30.30	769.6	30.35	770.9	62	11.1	66	NE	10	4.5		2k	8s	NE	NE	0	0	Cloudy	
Phœnix, Arizona	28.61	726.7			67	19.4	37	E								0	0	Cloudy	
Pike's Peak, Colorado	17.68	447.2	29.89	759.2	25	— 3.9	14	SW	100	44.8	2	0	0			0	0	Clear	
Pioche, Nevada	23.78	604.0	29.55	750.6	48	8.9	43	SW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.38	746.2	30.19	766.8	55	12.8	93	S	3	1.3			10s		SW	0	0	Fair	
Port Huron, Michigan	29.47	748.5	30.18	766.3	55	12.8	87	S	2	0.9			10s		Calm	0.10	2.5	Cloudy	
Portland, Maine	30.31	769.9	30.36	771.1	48	8.9	70	NW	3	1.3		1ck	Haze	Calm		0	0	Cloudy	
Portland, Oregon	29.52	749.8	29.62	752.3	50	10.0	93	E	8	3.6			10n		Calm	0.18	3.3	Clear	
Prescott, Arizona	24.61	625.1	29.97	761.2	55	12.8	68	SW	16	7.2		0	0			0	0	Light rain	
Pilot Point, Texas	29.17	740.9	29.96	761.0	71	21.7	95	SE	6	2.7		8k	Haze	S	Calm	0.02	0.5	Clear	
Punta Rassa, Florida	29.85	758.2	29.87	758.7	77	25.0	77	NE	14	6.3		5ck	0	NE		0.19	4.8	Hazy	
Red Bluff, California	29.49	749.0	29.64	777.9	55	12.8	87	Calm	0	0			10s		Calm	0.08	2.0	Fair	
Rio Grande City, Texas	29.76	755.9	29.97	761.2	74	23.3	85	SE	5	2.2		0	0			0	0	Cloudy	
Rochester, New York	29.69	751.6	30.21	767.3	50	10.0	79	SW	5	2.2		5ck	0	Calm		0	0	Clear	
Roseburg, Oregon	29.13	739.9	29.69	754.1	51.5	10.8	72	S	4	1.8			10n		Calm	0.25	6.3	Fair	
Sacramento, California	29.81	757.2	29.89	759.2	53	11.7	86	S	4	1.8		1k	0	S		0.16	4.1	Light rain	
St. Louis, Missouri	29.47	748.5	30.02	762.5	69	20.6	95	SE	8	3.6			10s		Calm	0.36	9.1	Clear	
St. Marks, Florida	30.04	763.0	30.06	763.5	69	20.6	86	NE	14	6.3		5ck	5s	NE	NE	0	0	Cloudy	
St. Paul, Minnesota	28.94	735.1	29.74	755.4	59	15.0	77	SE	15	6.7			10s		Calm	0.05	1.3	Cloudy	
Salt Lake City, Utah	25.34	643.6	29.67	753.6	50.5	10.3	52	E	2	0.9		5k	5s	SW	SE	0	0	Cloudy	
San Antonio, Texas	29.26	743.2	29.82	757.4	75	23.9	90	Calm	0	0			10s		SE	0	0	Cloudy	
San Diego, California	29.90	759.4	29.97	761.2	55	12.8	81	Calm	0	0		0	5s		Calm	0	0	Fair	
Sandusky, Ohio	29.50	749.3	30.17	766.3	58	14.4	94	Calm	0	0			10s		Calm	0.10	2.5	Threatening	
Sandy Hook, New Jersey	30.31	769.9	30.34	770.6	57	13.9	81	E	12	5.4		5c	5ks	NW	SW	0	0	Cloudy	
San Francisco, California	29.88	758.9	29.94	760.5	54	12.2	80	SW	10	4.5		0	2s		Calm	0.07	1.8	Fair	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	46	7.8	40	NE	4	1.8		0	0			0	0	Clear	
Savannah, Georgia	30.03	762.7	30.12	765.0	65	18.3	89	NE	12	5.4		5ck	2s	NE	Calm	0	0	Cloudy	
Shreveport, Louisiana	29.80	756.9	30.01	762.2	72	22.2	90	SE	4	1.8		0	0			0	0	Clear	
Silver City, New Mexico	24.28	616.7			55	12.8	26	Calm	0	0		0	0			0	0	Clear	
Smithville, North Carolina	30.12	765.0	30.16	766.1	64	17.8	89	NE	12	5.4			10s		Calm	0.04	1.0	Cloudy	
Springfield, Massachusetts	30.24	768.1	30.38	771.6	45	7.2	76	N	2	0.9			10s		NW	0	0	Cloudy	
Stockton, Texas	29.88	682.7	29.88	758.9	69	20.6	56	S	12	5.4		8k	0	S		0	0	Fair	
Thatcher's Island, Mass	30.30	769.6	30.36	771.1	51	10.6	86	Calm	0	0		10ck	0	NW		0	0	Cloudy	
Toledo, Ohio	29.45	748.0	30.12	765.0	58	14.4	94	S	3	1.3			10s;fg		N;calm	0.08	2.0	Cloudy	
Tucson, Arizona					69	20.6	35	Calm	0	0		0	0			0	0	Clear	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	68	20.0	90	NE	22	9.8			10ks		NE	Inap.	Inap.	Cloudy	
Umatilla, Oregon	29.31	744.5			48	8.9	70	Calm	0	0			10s		Calm	0	0	Cloudy	
Unalashka, Aleutian Islands					42	5.6	100	SW			4		10s		SW	0	0	Cloudy	
Uvalde, Texas	29.03	737.3	29.82	757.4	75	23.9	77	E	4	1.8		5k	0	S		0	0	Fair	
Vicksburg, Mississippi	29.84	757.9	30.09	764.8	69	20.6	90	SE	8	3.6		0	0			0	0	Clear	
Virginia City, Montana	23.99	609.3	29.47	748.5	39	3.9	82	Calm	0	0			10s		Calm	0	0	Cloudy	
Visalia, California	29.57	751.1	29.94	760.5	54	12.2	80	SW	1	0.4		0	0			0	0	Clear	
Washington, D. C	30.20	767.1	30.31	769.9	56	13.3	87	NE	4	1.8		8ck	Sm'e	W	NE	0	0	Cloudy	
Wickenburg, Arizona					53	11.7	67	N			1	0	0			0	0	Clear	
Wilmington, N. Carolina	30.08	764.0	30.16	766.1	64	17.8	88	NE	8	3.6			10s		NE	0	0	Cloudy	
Winnemucca, Nevada	25.41	645.4	29.77	756.1	45	7.2	61	W	7	3.1		0	10s		W	0	0	Cloudy	
Wood's Holl, Mass	30.32	770.1	30.38	771.6	54	12.2	73	E	2	0.9			10s		NW	0	0	Cloudy	
Yankton, Dakota	28.36	720.3	29.57	751.1	66	18.9	89	SE	5	2.2			10s		Calm	0	0	Cloudy	
Yuma, Arizona	29 66	753.4	29.82	757.4	67	19.4	54	N	14	6.3		0	0			0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska																			
York Factory, B. A	29.71	754.6	29.76	755.9	28.0	— 2.2	94	W	14	6.3		2c	3s	W	W	0.05	1.3	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.78	756.4	29.80	756.9	83	28.3	70	NE	1.2	0.5		4k	4n	NE	NE	0.08	2.0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.70	754.4	29.72	754.9	81	27.2	87	SW			1	8ck	8k		SW	Blank	Blank		Robert Mason.
St. Thomas					85	29.4	87	E	6	2.7		2c	8ks	E		0.90	22.9	Clearing	G. O. Gellich.
Kingston, Jamaica, W. I	29.94	760.5	29.95	760.7	82	27.8	91	Calm	0	0		8c	5s	E	SE	0	0		James Gall.
Navassa, W. I	29.70	754.4	29.78	756.4	82.5	28.1		S	15.4	6.9						0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.95	760.7	29.96	761.0	84	28.9	73	E			3	2c	0	E		0	0	Clear	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8			66.8	19.3	85	Calm	0	0			10s;ks			0.49	12.4		Thomas Herran.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Ledge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,020 (?) ft., or 654.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,100.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.00 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.18	766.6	72	22.2	72	22.2	80	NE	10	4.5	.....	.....	10	.....	NE	0	0	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	30.31‡	769.9‡	.....	.....	44	6.7	54	NW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.05*	763.3*	68.5	20.3	65	18.3	81	N	.....	.....	1	.....	8ks;sm	.....	SSW	0	0	.....	.....	Cloudy	
Adams. S. 45° 17′, W. 117° 34′	29.54	750.3	59	15.0	50	10.0	93	SW	.....	.....	4	.....	.....	.....	ESE	0	0	Long	SW	Cloudy	
Alliance, Messina, Sicily	30.07‡	763.8‡	.....	.....	76	24.4	50	NNW	.....	.....	1	.....	1	.....	Calm	.....	.....	None	.....	Clear	
Ashuelot. Yokohama, Japan	30.14	765.5	68	20.0	66	18.9	84	NNW	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy	
Alaska. Talcahuano, Chili	30.23	767.8	58	14.4	52	11.1	93	W	.....	.....	1	.....	5	.....	.....	0.35	8.9	Long	NW	D. clouds	
Colorado. New York, N. Y.	30.35‡	770.9‡	.....	.....	54	12.2	74	ENE	.....	.....	.....	.....	5	.....	NW	0	0	.....	.....	Hazy	
Constitution, Havre, France	29.91‡	759.7‡	.....	.....	63	17.2	89	ENE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Despatch, Volo, Turkey	29.99‡	761.7‡	.....	.....	69	20.6	48	NNW	.....	.....	3	.....	2	.....	N	.....	.....	.....	.....	Fair	
Essex, S. 30° 27′, W. 38° 20	30.27	768.8	67	19.4	60	15.6	100	S	.....	.....	3	.....	5	.....	S	.....	.....	Long	S	Fair	
Franklin, Norfolk, Va.	30.34	770.6	68	20.0	66	18.9	94	NE	2.4	1.1	.....	.....	8	.....	NE	0	0	.....	.....	Cloudy	
Gettysburg N. 36° 18′ 00″ W. 1° 09′ 30″	29.94‡	760.5‡	.....	.....	80	26.7	100	NE	.....	.....	3	.....	6?	.....	NE	0	0	Smooth	.....	Clear?.	
Guard, Bahia, Brazil	30.10	764.5	78	25.6	77	25.0	73	S	.....	.....	5	.....	8	.....	SSE	.....	.....	.....	.....	Misty	
Hartford, Rio de Janeiro, Brazil	30.18	766.6	.....	.....	72	22.2	76	Calm	0	0	.....	.....	2	.....	.....	0	0	.....	.....	Fair	
Marion, Naples, Italy	30.11	764.8	72	22.2	75	23.9	67	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Clear	
Michigan, Erie, Pa.	30.05†	763.3†	.....	.....	54	12.2	87	SE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Monocacy. Yokohama, Japan	30.07‡	763.8‡	.....	.....	69	20.6	65	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.26†	768.6†	.....	.....	67	19.4	89	NNE	24	10.7	.....	.....	8	.....	N	.....	.....	.....	.....	Cloudy	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	63	17.2	89	S	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	30.40	772.1	56	13.3	56	13.3	100	NE	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Cloudy	
Palos, Tientsin, China	29.93	760.2	70	21.1	68	20.0	79	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Light haze	
Plymouth. Portland, Maine	30.39	771.9	51	10.6	50	10.0	79	SW	.....	.....	0–1	.....	5	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, Portsmouth, N. H.	30.37‡	771.4‡	.....	.....	45	7.2	84	NW	1.8	0.8	.....	.....	5	.....	.....	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China	30.08	764.0	82	27.8	81	27.2	87	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.91	759.7	77	25.0	77	25.0	95	E	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.34	770.6	.....	.....	60	15.6	88	E	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Saratoga, Philadelphia, Pa.	30.24*	768.1*	.....	.....	53	11.7	67	NE	.....	.....	1	.....	8	.....	N	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa.	30.20	767.1	59	15.0	54	12.2	74	NE	5	2.2	.....	.....	10	.....	NE	0	0	.....	.....	Cloudy	
Supply, Havre, France	30.06	763.5	65	18.3	65	18.3	78	ESE	.....	.....	0–1	.....	2	.....	ESE	.....	.....	.....	.....	Clear	
Swatara, Boston, Mass.	30.37‡	771.4‡	.....	.....	52	11.1	79	NNW	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
Trenton, N. 46° 55′, W. 12° 53′	29.88‡	758.9‡	.....	.....	62	16.7	100	W	.....	.....	3	.....	8	.....	W	0.1	3.	.....	.....	Misty	
Tuscarora. La Paz, Mexico	29.70	754.4	80	26.7	81	27.2	78	S	.....	.....	0–1	.....	0	.....	.....	0	0	.....	.....	Clear	
Vandalia. Barcelona, Spain	30.01‡	762.2‡	.....	.....	74	23.3	76	SSW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.	
Wabash, Boston, Mass.	30.40‡	772.1‡	.....	.....	49	9.4	78	NW	1	0.4	.....	.....	8	.....	Calm	0	0	.....	.....	Cloudy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Seattle, W. T.		29.66*	753.4*				SE			4		10						Rainy	Capt. Seabury.
S. S City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 14° 00', W. 91° 32'		29.92†	760.0†	79	26.1	??	E			2		8		WNW	Blank	Small	E	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
S. S. Republic																			Capt. H. Perry.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 44° 10', W. 175° 08'		30.27*	768.8*	54	12.2	87	ENE			4		n		E		Mod'ate	E	D. clouds	Capt. L. Myer.
S. S. Gaelic, Hong-Kong, China		30.06†	763.5†				SE			3		n			Heavy			D. clouds	Capt. W. H. Kidley.
S. S. Oceanic, N. 37° 31', E. 176° 20'		30.22	767.6	71	21.7	95	SSE			5		0				8	WSW	Blue sky	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 50° 30', W. 175° 31'		29.17	756.1	65.5	18.6	60	W			4		5		WNW	4 hours	4	W		Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				71	21.7	95	SE			1		6		SE	Light			Clearing,	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.35	770.9?	57	13.9	94	N			2		10		N	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 20′ W. 40° 08′		29.67*	753.6*				W	20	8.9			7		W		Mod'ate	WSW	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 17° 24′, W. 65° 20′		29.83	757.7	86	30.0	72	ESE	10	4.5			2k		E	0	Short sea		Blue sky	Capt. James Jorgen sen.
Schooner Florence																			O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON SEPTEMBER 30, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.04	763.1	68.4	20.2	83	NE			3		1			0	0	Very fair	Dr. Ollive.
Nemours			30.08	763.9	74.8	23.8	77	ENE			5		5			0	0	Cloudy	Kesxuche.
Algiers			30.00	762.1	78.1	25.6	83	NE			1		1			0	0	Very fair	Tourilliere.
La Calle			30.05	763.3	75.2	24.0	85	ENE			5		3			0	0	Pretty fair	Foufrede.
Tunis			30.04	763.0	82.9	28.3	66	NE			5		2			0	0	Fair	Jacques.
Sfax			30.16	766.0	82.4	28.0		S			3		2			0	0	Fair	Gau.
Saida			30.02	762.4	81.0	27.2	54	N			5		1			0	0	Very fair	Herbin.
Tebessa			30.04	763.1	78.3	25.7	24	NNE			5		5			0	0	Cloudy	Watrin.
Geriville			30.04	762.9	82.4	28.0	33	N			3		6			0	0	Cloudy.	Brugniaux.
Laghouat			30.15	765.7	82.4	28.0	39	Calm			0		0			0	0	Clear	Bertrand.
Biskra			30.09	764.2	89.6	32.0	28	SE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.44	747.7	29.97	761.3	68.9	20.5	62	S			2		4			0	0		Prof. Ivan Storir.
Cracow, I. R. Observatory	29.16	740.7	29.91	759.7	65.8	18.8	70	SW			1		9			0	0		Dr. Wierzbiski
Eperies	29.07	738.4	29.93	760.2	64.8	18.2	69	S			2		8s		SE	0	0		Julius Mikolik.
Gratz	28.73	729.7	29.66	760.9	62.6	17.0	80	S			2		0			0	0		Andreas Rospini.
Hermannstadt	28.67	725.7	30.02	762.6	63.9	17.7	66	NW			1		0			0	0		Prof. A. Gottschling.
Kremsmünster	28.67	725.6	29.88	758.9	62.2	16.8	81	Calm			0		3			0	0		Prof. C. Wagner
Lemberg	28.94	735.1	29.91	759.8	59.4	15.2	67	SE			2		4			0	0		Dr. T. Stanecki.
Pola	29.95	760.8	30.00	762.5	71.2	21.8	73	SSE			1		5ks			0	0		I.R.Hydrographic Office
Szathmar	29.60	751.8	30.05	763.3	64.2	17.9	65	SW			2		8			0	0		Julius Csics, S. J.
Szegedin	29.76	755.8	30.03	762.7	67.6	19.8	54	Calm			0		0			0	0		Karl Stancel.
Trieste	29.98	761.4	30.08	764.0	68.0	20.0	79	Calm			0		7			0	0	Cloudy	P. Busin.
Vienna	29.22	742.2	29.92	760.0	65.7	18.7	72	Calm			0		0			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna smybols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.85	720.2	29.83	757.6	61.7	16.5	72	SW			6		7			0	0		Prof. M. Passau.
Brussels	29.51	749.5	29.71	754.5	63.7	17.6	72	SW			5		5		WSW	0.069	1.75		Royal Observatory
Furnes																			M. E. de Cae.
Maeseyck	29.72	755.0	29.75	755.6	61.9	16.6	63	WSW			0		7			0.047	1.2		M. Pierrot.
	29.60	751.9	29.73	755.2	63.3	17.4	76	SW			4		10			0.043	1.1		

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.70	754.4	29.80	756.9	49.0	9.4	.....	ENE	16	7.2	.....	.....	9	.....	.....	0.030	0.76	Overcast	W. Boswell.
Ardrossan	29.69	754.1	29.71	754.6	51	10.6	.....	NE	.....	.....	4	.....	8	.....	.....	.....	.....	Misty	George Carrick.
Armagh, Observatory	.....	.....	29.77	756.1	55.3	12.9	.....	W	4	1.8	.....	.....	10	.....	.....	1.567*	39.80*	Gloomy	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.63	752.6	55	12.8	.....	W	42	18.8	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.20	741.7	29.60	751.8	56.7	13.7	.....	W	.....	.....	2	.....	10	.....	.....	0.75	19.1	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	83.6	28.6	.....	NE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.64	752.8	57.1	13.9	.....	W	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.69	754.1	56.0	14.4	.....	W	.....	.....	5	.....	10	.....	.....	Blank	Blank	Overcast	John McLaren.
Chatham, School M. E.	29.58	751.3	29.71	754.6	63.2	17.3	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	Lt.Col.C.N. Martin, R.E.
Dartmoor	28.44	722.4	29.90	759.4	55.0	12.8	.....	NW	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds	Alexander Watt.
Donaghadee	29.71	754.6	29.73	755.1	53	11.7	.....	NNE	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	J. Mac Gowan.
Dover	29.69	754.1	29.72	754.9	62	16.7	.....	WSW	.....	.....	5	.....	4	.....	.....	.....	.....	⅜ clouded	J. Costello.
Eccles, (near Manchester)	.....	.....	29.61	752.1	55.7	13.2	.....	NW	2.2	1.0	.....	.....	10	.....	.....	.....	.....	Gloomy	Thomas Mackereth.
Falmouth, Observatory	29.73	755.1	29.96	761.0	61.0	16.1	.....	WNW	.....	.....	5	.....	6	.....	.....	.....	.....	Squally	The Staff.
Fort Napier, (Natal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	79	26.1	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	Raining	
Galway, Queen's College	.....	.....	29.80	756.9	60	15.6	.....	WSW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.59	759.2	29.94	760.5	.....	.....	.....	E	.....	.....	2	.....	9	.....	.....	Blank	Blank	Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.86	758.4	30.06	763.5	50.3	10.2	.....	NE	.....	.....	6	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	29.55	750.6	29.56	750.8	55	12.8	.....	W	.....	.....	4	.....	7	.....	.....	.....	.....	Raining	G. T. Watson.
Greenwich, Royal Obs'y	29.55	750.6	29.72	754.9	61.4	16.3	.....	WSW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.95	760.7	61.5	16.4	.....	WSW	.....	.....	5	.....	3	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.04	763.0	65	18.3	.....	SW	.....	.....	1	.....	2c	.....	.....	0	0	Fine	M. P. Moyle.
Holyhead	29.72	754.9	29.77	756.1	53	11.7	.....	WNW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	John Tilston.
Jersey	29.64	752.8	29.93	760.2	60.9	16.1	.....	WNW	.....	.....	6	.....	4	.....	.....	.....	.....	D. clouds	J. Fisher.
Kew, Observatory	29.70	754.4	29.73	755.1	60.7	15.9	.....	W	23	10.3	.....	.....	7	.....	.....	.....	.....	D. clouds	The Staff.
Kingstown	29.76	755.9	29.79	756.7	58	14.4	.....	NW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds	Georgo Mitchell.
Leicester, Museum	.....	.....	29.64	752.8	55.6	13.1	.....	W	.....	.....	5	.....	10	.....	.....	Blank	Blank	Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.83	758.9	29.95	760.7	77.0	25.0	.....	NE	.....	.....	1	.....	2k	.....	.....	.....	.....	D. clouds	Sergt. Beckett.
Nairn	29.72	754.9	29.82	757.4	50	10.0	.....	E	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.74	755.4	82.6	27.8	.....	N	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.45	748.0	29.63	752.6	54.8	12.7	.....	SSW	.....	.....	5	.....	10d	.....	W	0.270	6.86	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.15	740.4	29.67	753.6	54.1	12.3	.....	W	.....	.....	6	.....	10	.....	.....	.....	.....	Drizzling	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.73	755.1	60	15.6	.....	W	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds	H.E. Bellamy.
Plymouth	29.83	757.7	29.91	759.7	62.1	16.7	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	29.82	757.4	29.88	758.9	60	15.6	.....	W	.....	.....	4	.....	5	.....	.....	.....	.....	Clear	W. Kennedy.
Saint Ann's Head	29.68	753.9	29.84	757.9	57	13.9	.....	WNW	.....	.....	6	.....	5	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.89	759.2	48.9	9.4	.....	NE	18	8.0	.....	.....	4	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.08	764.0	65.4	18.6	.....	NE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.33	745.0	29.61	752.1	59.3	15.2	.....	SW	.....	.....	4	.....	8	.....	.....	0.22	5.6	Overcast	W. F. Cooper.
Silloth, Rectory	29.64	752.8	29.67	753.6	54.0	12.2	83	SW	.....	.....	1	.....	10	.....	.....	0.270	6.86	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.22	742.2	29.62	752.3	56.1	13.4	.....	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.56	750.8	29.78	756.4	54.9	12.7	.....	W	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	.....	.....	29.88	758.9	50	10.0	.....	ENE	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.95	760.7	64	17.8	.....	W	.....	.....	7	.....	6	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	29.87	758.7	29.90	759.4	59.0	15.0	.....	WSW	18	8.0	.....	.....	10	.....	.....	Blank	Blank	Misty	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.84	757.9	51.0	10.6	76	NW	.....	.....	3	.....	10kn	.....	.....	0.06	1.5	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.92	760.0	30.11	764.8	75.2	24.0	59	E	19.5	8.7	.....	1	3	.....	ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.02	762.5	30.11	764.8	48.1	8.9	85	NE	6	2.7	.....	0	.....	.....	.....	0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle, N. 35° 55', W. 68° 55'	2	E	Overcast	Capt. W. Waring.
Barque Margaret Smith, N. 19° 45', W. 46° 0'	.....	E	D. clouds	Capt. D. W. A. Quaile.
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 46° 15', W 28° 10'	4	NW	D. clouds	Capt. Alex Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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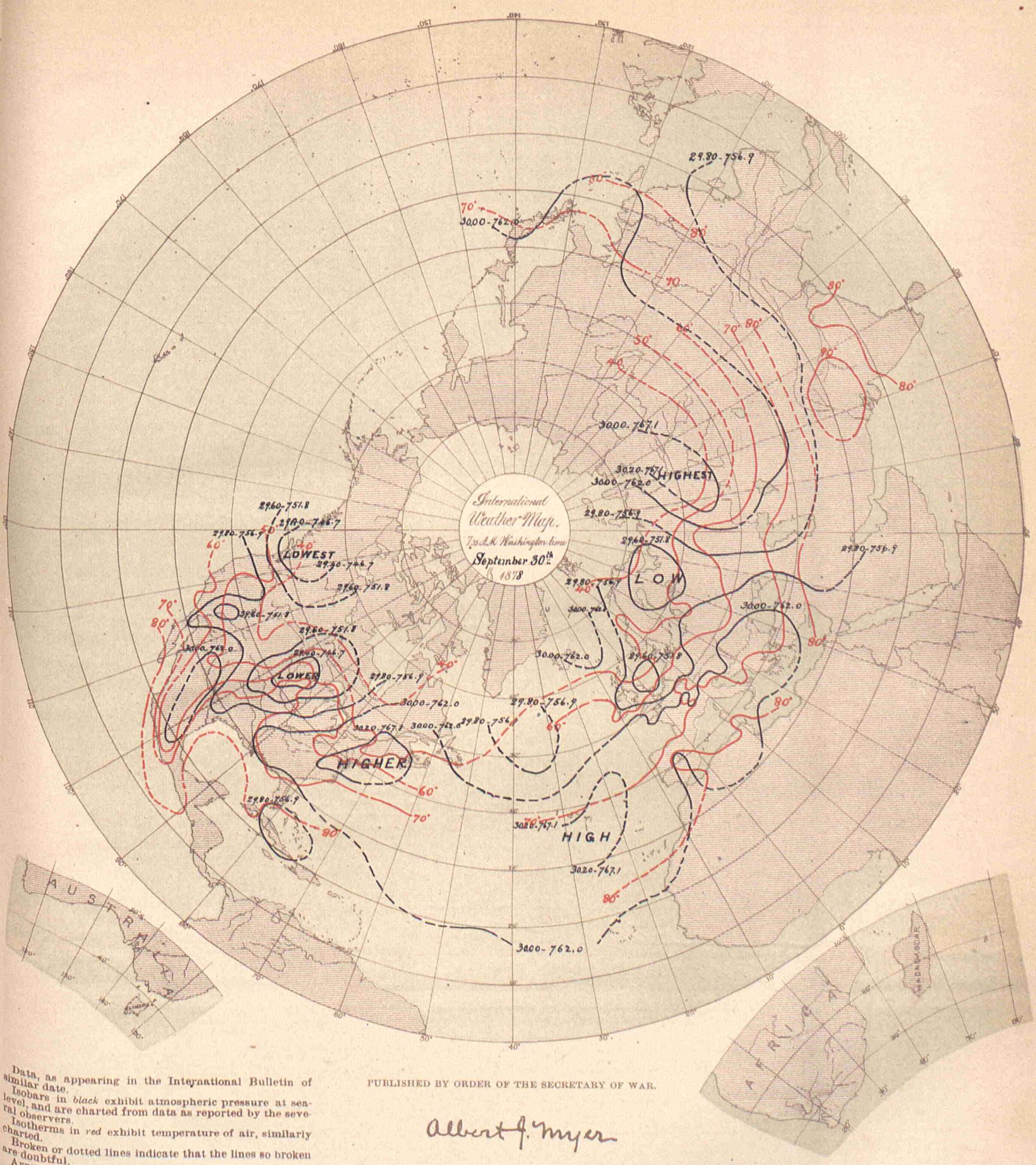
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount: the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.26	667.0			67.6	19 8	98	Calm			0		10n			0.42	10.7		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.66	753.4	29.71	754.6	54.1	12.3	62	SW			4		10						
Farõe	29.62	752.4	29.64	752.9	50.0	10.0	91	SE			4		10						Raining
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Farõe)	29.99	761.8	30.03	762.7	45.9	7.7	58	NE			2		5						
Vestervig	29.45	748.0	29.62	752.3	51.6	10.9	75	NW			2		10						Raining

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.47	748.6	30.02	762.6	62.6	17	92	NE			3		5		N	0	0	Cloudy	Collignon, Director.
Amiens, Normal School																			Bonvallet, Director.
Avignon, Normal School	30.00	762.0	30.03	764.0	75.9	24.4	67	SE			1		2		WSW	0	0	Partly cl'dy	M. Girand, Director.
Bar-sur-Seine	29.41	747.0	29.95	760.8	63.9	17.7	65	SW			4		10n		SW	0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.61	752.0	29.88	759.0	64.8	18.2	61	WNW			3		5		W	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.20	741.7	30.07	763.8	70.2	21.2	51	SSW			6		1		SW	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School																			M. Marlot, Director.
Bourges, Normal School	29.49	749.1	30.04	762.9	60.8	16	69	SW			4		2ck		SW	0	0	Slightly cov	A. Wagner, Director.
Brest, Naval Observatory	29.76	755.9	30.00	762.1	68.7	20.4	64	W			3		4k		W	0	0		The Staff.
Carcassonne, Normal School	29.71	754.6	30.11	764.8	71.6	22	47	N			6		5	W	E	0	0	Cloudy	Septembre, Director.
Caen																			Normal School.
Chartres, Normal School	29.29	744.0	29.84	758.0	68.7	20.4	80	S			4		10	NE	NE	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.58	751.2	29.88	759.0	67.6	19.8	72	SW			4		5	SW	SW	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.70	728.9	30.01	762.3	68.4	20.2	59	E			1		1		W	0	0	Almost clear	Allnard, Director.
Commercy, Normal School	29.07	738.4	29.93	760.2	62.6	17	81	W			3		2cn		W	0	0	Slightly cl'dy	Dr. Coulet, Director.
Commune de Grèasque*	29.01	736.9	30.15	765.9	76.6	24.8	54	SW			1		5	SW		0	0	½ Covered	M. Kina.
Grenoble, Normal School																			M. Ablard, Director.
La Roche-sur-Yon, N. Sch'l																			Mouillot, Director.
Le Mans, Normal School	29.72	755.0	30.03	762.8	61.2	16.2	71	W			3		2		WNW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	739.8	30.05	763.3	71.6	22	82	SW			1		5		SW	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory																			T. Carré, Director.
Mâcon, Normal School	29.97	761.2	30.00	762.0	68.7	20.4	82	S			1		0			0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	28.99	733.8	29.91	759.6	67.1	19.5	63	SSW			1		2ck		WSW	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes Normal School	29.85	758.1	30.07	763.7	81.0	27.2	68	N			4		k	N		0	0		Boyer, Director.
Privas, Normal School	29.66	738.2	30.10	764.5	70.2	21.2	68	Calm			0		0			0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.17	639.4			46.6	8.1	100	W			3					0	0	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	30.10	764.5	30.13	765.3	67.3	19.6	78	NW			2		10	NW	NW	Inap.	Inap.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.82	757.5	29.91	759.7	65.1	18.4	52	W			4		2	W	W	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)			30.01	762.3	63.7	17.6		WNW			3		1		WNW	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.75	755.6	29.91	759.8	67.5	19.7	56	W			3		6		W	0	0	Fair	E. Renou.
Tarbes, Normal School	29.09	738.9	30.16	766.0	64.4	18	80	S			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.																			M. Gausserand, Director
SUB-STATIONS.																			
Fort de France, Martinique	29.81	757.1	29.84	757.8	80.6	27										0	0		L'Abbé Marchès.
Lyons			30.04	763.1	75.6	24.2	45					5				0	0		L. Jays.
Marseilles, Observatory			30.07	763.7	72.9	22.7	53	W			1	7				0	0	Very cloudy	The Staff.
Mont-Louis	24.96	633.8	30.27	768.8	61.3	16.3	49	WSW			4	3			SE	0	0		M. Cave.
Nice			30.11	764.7	69.8	21.0	85	SW			1	1				0	0	Clear	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.62	752.4	29.90	759.4	66.9	19 4	56	W			4	7			WSW	0	0		Marié Davy, Director
Perpignan			30.10	764.6	73.8	23.2	64	S	5.6	2.50		0				0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.69	576.4			60.8	16 0		SW			2	5				0	0	Fair	Gen'l de Nansouty.
Toulouse, Observatory	29.47	748.6	30.20	767.1	65.7	18.7	76	NNW			2	9				0	0		The Staff.
Tours	29.83	757.6	30.02	762.6	64.2	17.9	74	W			1	8			WNW	0	0		C. Marquet.
Versailles			29.92	759.9	66.2	19.0	49	W			3	8				0.008	0.20	Cloudy	Dr. A. Bériguy.
Zi-Ka-Wei, (near Shanghai)	30.03	762.7	30.06	763.4	71.6	22.0	93	E	7.4	3.3		8ck				0.008	0.20	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.90	734.0	29.73	755.2	63.1	17.3	63	W			5		8	W		0	0		Prof. Dr. Hoh.
Berlin	29.82	757.3	29.75	755.6	61.3	16.3	63	S			1		6			0	0		Prof. Arndt.
Breslau	29.35	745.4	29.87	758.8	66.2	19.0	66	SSE			3		6			0	0		Royal University Obs'y
Carlsruhe	29.41	747.0	29.82	757.4	70.2	21.2	61	SW			4		1			0	0		Albert Senx.
Cassel	29.13	740.0	29.74	755.3	61.5	16.4	79	SSW			6		6	W		0.192	4.87		Dr. H. Möhl.
Crefeld	29.53	750.1	29.69	754.2	67.3	19.6	61	SW			4		4			0	0		Director Lose.
Emden	29.60	751.8	29.63	752.7	57.2	14.0	93	S			3		10			0.327	8.3	Thunder; light'ng	Prof. Prestel.
Frankfort on the Main	29.46	748.2	29.82	757.4	60.4	15.8		W			2		6			0	0		Physical Society.
Friedrichshafen	28.56	725.3	29.97	761.3	59.4	15.2	85	S			5		3	SW		0	0		M. Wilhelm.
Hamburg	29.62	752.4	29.69	754.2	52.9	11.6	92	SE			4		10			0.028	0.7	Showery	Captain F. Hegemann.
Kiel	29.65	753.2	29.67	753.6	53 8	12.1	86	SE			1		10			0.062	1.58		Prof. G. Karsten.
Königsberg, (Prussia)	29.73	755.1	29.81	757.2	56.3	13.5	64	W			3		4			0.291	7.4		Prof. E. Luther.
Köslin			29.79	756.7	55.0	12.8		W			2		4			0	0		H. Müller.
Leipsic, Observatory	29.36	745.7	29.77	756.1	68.0	20.0	58	S			3		6	SW		0.004	0.1		Prof. Bruhns.
Memel, Naval School	29.77	756.1	29.82	757.3	53.8	12.1	56	WNW			2		1s						Reinbrecht and Skalweit.
Neufahrwasser	29.83	757.7	29.85	758.1	57.0	13.9	61	W			3		8			0	0		A. Lothes.
Posen	29.61	752.2	29.90	759.4	61.3	16.3	58	WSW			2		9			0	0		Dr. Magener.
Strassburg (in Alsace)	29.34	745.2	29.87	758.6	72.3	22.4	56	SW			1		4	SW		0	0		Astronomical Observatory.
Stuttgart	28.91	734.4	29.82	757.4	71.1	21.7	51	SW			6		2	W		0	0		Prof. Schoder.
Treves, (Trier)	29.26	743.1	29.78	756.3	66.9	19.4	65	W			7		8			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.39	721.2	29.87	758.8	65.7	18.7	69	W	5.8	2.6			4ck		WNW	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.77	756.1	29.81	757.1	52.0	11.1	66	SSE			2		8			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.72	754.8	30.10	764.5	72.1	22.3		NE			1.5							½ Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.73	755.2	29.78	756.4	90.3	32.4	61	WSW	14?	6.3?			0			0	0	Blue sky	
Deesa	29.29	744.0	29.75	755.7	93.8	34.3	38	NE					0			0	0	Blue sky	
Bombay	29.65	753.2	29.69	754.1	86.3	30.2	84	NW	12	5.4			10		SE	0	0	Overcast	
Poona	27.76	705.1	29.76	755.8	77.9	25.5	82	SSE					10		SSE	0	0	Thunder	
Lahore	28.98	736.0	29.70	754.3	92.1	33.4	34	Calm	0.6	0.3			0			0	0	Blue sky	
Belgaum	27.20	690.7	29.72	754.9	75.9	24.4	91	W	4	1.8			10		E	0.04	1.0	Thunder storm	
Roorkee	28.23	732.2	29.71	754.7	85.8	29.9	56	Calm	1	0.4			0			0	0		
Agra	29.16	740.7	29.71	754.7	92.2	33.4	47	S								0	0		
Nagpur	28.67	728.3	29.70	754.3	87.1	30.6	66	Calm	3.8	1.7			5		SE	0	0	D. clouds	
Lucknow																			
Allahabad	28.41	747.0	29.72	754.8	86.1	30.1	77	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.54	750.2	29.72	754.8	87.6	30.9	75	Calm	1.4	0.6			4	E	E	0	0	D. clouds	
Hazaribagh	27.74	704.7	29.75	755.7	77.6	25.3	87	SE	6.0	2.7			10		SE	0.14	3.6	Thunder-storm	
Cuttack	29.70	754.5	29.79	756.6	80.0	26.7	82	Calm	0.8	0.4			4			0.04	1.0	D. clouds	
Calcutta (Alipore)	29.73	755.2	29.76	755.8	83.7	28.7	87	SSW	2.0	0.9			8			0	0	D. clouds	
Goalpara	29.36	745.9	29.75	755.7	83.8	28.8	78	S	1.8	0.8			3			0	0	D. clouds	
Chittagong	29.67	753.6	29.76	756.0	82.4	28.0	85	Calm	1.9	0.8			9			0	0	Misty	
Sibsagar	29.42	747.3	29.75	755.7	83.3	28.5	81	SW	0.5	0.2			8	W	W	0	0	D. clouds	
Jubbulpore	28.41	721.5	29.76	756.0	81.8	27.7	75	S	2.7	1.2			10			0	0	Thunder	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.69	754.1	30.03	764.3	65.3	18.5	72	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.95	760.6	30.05	763.3	70.3	21.3	63	SSE	1.3	0.6	.....	.....	4	WSW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.86	758.5	30.05	763.3	68.5	20.3	71	N	1.3	0.6	.....	.....	6	W	.....	0	0	.....	Cont'e Alm. Da Schio.
Bergamo	28.74	730.0	30.01	762.3	70.9	21.6	72	SSW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.55	750.6	30.07	763.6	71.1	21.7	57	N	.....	.....	2	.....	8	NW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.30	744.2	30.07	763.8	70.5	21.4	68	NNE	2.5	1.1	.....	.....	3	SE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.15	715.1	30.03	762.7	64.4	18.0	80	NE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.85	758.2	30.07	763.7	72.9	22.7	68	SSW	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.90	759.4	30.07	763.6	73.0	22.8	68	SE	.....	.....	6	.....	4	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.73	755.2	30.04	763.1	73.6	23.1	52	N	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.84	758 0	30.10	764.4	73.0	22.8	58	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.95	760.6	30.02	762.5	72.7	22.6	75	SSW	7.4	3.3	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.57	725.7	30.09	764.3	69.1	20.6	54	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.94	760.5	30.11	764.9	75.9	24.4	57	W	6.9	3.1	.....	.....	2	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.91	759.8	30.11	764.7	75.9	24.4	57	S	.....	.....	1	.....	3	WSW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.85	758.1	30.10	764.4	70.2	21.2	48	NNE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.87	758.6	30.06	763.4	75.9	24.4	66	E	.....	.....	2	.....	3	SE	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.23	742.5	30.14	765.5	74.7	23.7	71	SW	.....	.....	1	.....	2	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.88	758.9	30.13	765.2	72.7	22 6	58	ENE	4.8	1.9	.....	.....	0	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.06	763.4	30.13	765.2	73.2	22.9	65	E	1.3	0.6	.....	.....	4	WNW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	29.59	751.6	30.15	765.7	73.0	22.8	66	SSE	1.3	0.6	.....	.....	4	S	.....	0	0	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.85	758.2	30.05	763.3	70.0	21.1	76	NE	2.5	1.1	.....	.....	10s	.....	.....	0	0	Cloudy.....	I. Arai, Director.
Tokei (Yeddo) Observatory	29.92	759.9	29.98	761.5	67.3	19.6	87	NE	3.5	1.6	.....	.....	10s	.....	.....	0	0	Cloudy.....	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.4	18.0	68	N	.....	.....	4	8clk	0	SE	.....	0	0	Cloudy.....	P. Ceballos.
Guadalajara	25.05	636.0	29.98	761.5	59.9	15.5	77	SW	.....	.....	1	0	8k	.....	W	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.40	619.9	29.98	761.5	60.4	15.8	82	NW	.....	.....	3	0	0	.....	.....	0	0	Blue sky.....	Prof. M. Leal.
Mexico	23.10	586.8	30.14	765.6	59.2	10.1	84	NW	1.1	0.5	.....	0	6k	.....	.....	0	0	Fair.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.5	15.3	79	Calm	.....	.....	0	0	1s	.....	.....	0	0	Clear.....	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.35	8.90	.....	Prof. B. Gonzalez.
Tlacotalpam	29.84	757.9	29.85	758.2	77.7	25.4	91	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy	M. M. Cházaro.
San Luis Potosi	24.15	612.7	30.01	762.3	66.0	13.3	41	ESE	.....	.....	.....	0	1	.....	.....	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.90	759.3	29.93	760.0	78.8	26.0	84	NW	.....	.....	.....	0	2k	.....	.....	0	0	Clear	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	57.2	14.0	76	NE	.....	.....	2	4	3	SW	NE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.5	30.00	762.2	49.6	9.8	89	SE	0	0	.....	0	1	.....	Calm	0.284	7.20	Clear	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.33	719.5	29.94	760.5	79.3	26.3	85	E	1.6	0.8	.....	4	4	E	E	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pubellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.60	754.0	29.69	754.0	63.7	17.6	.....	WSW	.....	.....	5	.....	.....	.....	.....	0	0	.....	
Groningen	29.55	750.5	29.60	751.9	57.7	14.3	.....	S	.....	.....	1	.....	.....	.....	.....	0.079	2.0	.....	
Helder	29.54	750.3	29.54	750.3	60.4	15.8	.....	S	.....	.....	4	.....	.....	.....	.....	0.150	3.8	.....	
Hellevoetsluis	29.67	753.5	29.67	753.5	62.2	16.8	74	WSW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.58	751.4	29.63	752.6	62.1	16.7	88	SSW	.....	.....	5	.....	8	.....	.....	0.122	3.1	Very cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.70	754.3	29.75	755.7	46.8	8.2	57	NNW	8.7	3.9	.....	.....	3	.....	.....	0	0	.....	
Brönö	29.61	752.2	29.65	753.2	49.6	9.8	64	Calm	0	0	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.54	750.2	29.68	753.9	50.2	10.1	60	SSW	4	2	.....	.....	9	.....	.....	0	0	.....	
Tromsö	29.67	753.6	29.71	754.7	41.7	5.4	72	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.00	761.9	30.19	766.7	70.2	21.2	80	SW	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.04	737.6	30.03	762.8	76.5	24.7	43	ESE	13.0	5.8	.....	.....	7	ESE	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.06	763.5	30.15	765.7	75.2	24.0	51	SW	8.1	3.6	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.69	754.2	30.04	763.1	73.0	22.8	49	NE	9.8	4.4	.....	.....	3	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.16	766.1	30.23	767.9	74.8	23.8	62	SE	4.3	1.9	.....	.....	6	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Paul de Loanda	.....	.....	29.89	759.2	78.8	26.0	.....	W	.....	.....	3	.....	2	.....	W	1	.....	Blue sky	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 12° 59′, E. 12° 17′	.....	.....	29.98	761.5	75.9	24.4	.....	WNW	.....	.....	4	.....	4	.....	WNW	4	SW	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 14° 54′, W. 23° 47′	.....	.....	29.91	759.8	85.1	29.5	.....	NNE	.....	.....	4	.....	5	.....	NNE	2	NNE	Blue sky	L. Ribeiro de Costa, Com'd't.
Tejo, N. 22° 10′, E. 113° 32′	.....	.....	29.56	750.7	85.1	29.5	.....	ENE	.....	.....	4	.....	2	.....	ENE	2	SE	D. clouds	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals, except for Tejo and Quanza, give the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.49	749.1	29.91	759.8	56.7	13.7	49	W	9	4	.....	.....	8ck;ks	.....	.....	.....	.....	Solar corona	Astronomical Obs.
Wilna	29.41	746.9	29.83	757.6	50.5	10.3	78	SW	2	1	.....	.....	6	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.39	746.5	29.63	752.6	50.4	10.2	66	W	9	4	.....	.....	8km	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.51	749.6	29.53	750.0	50.2	10.1	74	W	13	6	.....	.....	8n	.....	.....	.....	.....	.....	Central Physical Obs
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.24	742.7	29.87	758.6	55.8	13.2	42	WNW	9	4	.....	.....	5k;ks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.92	760.0	29.99	761.8	63.3	17.4	51	NNW	22	10	.....	.....	2k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.89	759.1	29.91	759.6	63.9	17.7	68	NNW	9	4	.....	.....	7	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.15	740.3	29.69	754 2	50.7	10.4	93	S	9	4	.....	.....	10s	.....	.....	.....	.....	Light rain	Meteorological Obs.
Lugan	29.52	749.7	29.72	754.8	66.2	19.0	76	W	34	15	.....	.....	8	.....	.....	.....	.....	Raining	Meteorological Obs
Archangel	29.51	749.6	29.53	750.1	46.2	7.9	94	ESE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Ssellwerstow.
Tiflis	28.42	721.8	29.78	756.3	73.4	23.0	44	SW	4	2	.....	.....	10k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	29.94	760.5	29.86	758.4	68.9	20.5	46	E	20	9	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.41	747.1	29.89	759.1	66.4	19.1	26	ESE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.70	754.4	29.97	761.1	66.7	19.3	42	SSW	22	10	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.37	745.9	30.34	770.7	39.4	4.1	82	SSE	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.74	755.3	29.97	761.1	66.4	19.1	25	NNW	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	
Tashkend	28.39	721.0	30.06	763.4	66.9	19.4	75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.57	751.1	30.11	764 7	38.7	3.7	55	N	13	6	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.85	758.2	30.15	765.9	34.2	1.2	76	NNE	2	1	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.75	755.6	29.89	759.2	68.9	20.5	83	Calm	0	0	.....	.....	9n	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.95	760.7	30.05	763.3	74.8	23.8	60	SSE	1.4	0.64	.....	.....	1k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.11	764.8	30.17	766.2	70.0	21.1	76	N	1.9	0.87	.....	.....	10	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.19	690.7	.....	.....	65.7	18.7	71	NE	6.6	2.97	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.85	707.4	29.97	761.1	82.8	28.2	39	SE	3.7	1.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.96	761.0	30.11	764.7	81.9	27.7	64	W	3.3	1.47	.....	1	3	NNW	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.21	741.9	30.09	764.3	66.7	19.3	71	NE	12.4	5.56	.....	.....	2	.....	.....	0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.74	755.5	29.81	757.1	77.8	25.4	91	E	10.5	4.7	.....	.....	10n	.....	NE	0.831	21.1	Stormy	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.97	761.1	30.06	763.6	72.0	22.2	66	SSE	8.6	3.9	.....	0	10	.....	S	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.82	757.3	29.91	759.7	84.2	29.0	92	SE	4.4	1.98	.....	7s	2k	SE	SE	0	0	Clear?	Leonardo de Tejada, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.8	29.56	750.8	42.1	5.6	.....	NE	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	
Umea	29.53	750.1	29.58	751.4	42.1	5.6	75	NNW	.....	.....	2	.....	10	.....	.....	0.209	5.3	.....	
Hernosand	29.56	750.8	29.61	752.1	47.1	8.4	52	NNW	.....	.....	2	.....	3	.....	.....	0	0	.....	
Stockholm	29.51	749.5	29.69	754.0	46.9	8.3	65	WNW	.....	.....	4	.....	4	.....	.....	0.004	0.1	.....	
Wisby	29.64	752.9	29.70	754.4	51.1	10.6	61	WNW	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.60	751.9	29.68	753.8	46.6	8.1	75	W	6.0	2.7	.....	.....	10	.....	WNW	0.039	1.00	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.61	726.7	29.98	761.4	75.7	24.3	42	SSW	.....	.....	3	.....	3	.....	.....	0	0	Vapory.....	The Observatory.
Zurich	28.37	720.6	29.95	760.8	70.3	21.3	60	SW	.....	.....	.....	.....	2	.....	.....	0	0	Clear.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.1 mm.; Thermometer, +8.5 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.13	765.4	64.8	18.2	63	NE	7	3.0	.....	.....	8	.....	N	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.2	71.1	21.7	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.75	755.6	29.86	758.5	81.0	27.2	63	SW	.....	.....	3	.....	9n	.....	SW	0.12	3.0	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.87	758.7	30.17	766.3	55	12.8	.....	SW	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy.....	W. R. Bigg.
*Chatham, N B	30.14	765.5	30.20	767.1	43	6.1	90	SW	1	0.4	.....	5clc	0	SW	....	0	0	Fair.....	G. A. Blair.
Charlottetown, P. E. Island	30.14	765.5	30.18	766.6	54	12.2	71	W	4	1.8	.....	8clc	0	W	.....	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.91	759.7	30.11	764.8	53.3	11.8	89	SE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.18	766.6	45.9	7.7	88	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.36	745.5	29.40	746.7	49.3	9.6	100	E	.....	.....	.....	.....	10s	.....	.....	0.23	5.8	Overcast.....	W. H. Bevis.
*Father Point, Quebec	30.13	765.3	30.15	765.8	44	6.7	84	SW	4	1.8	.....	8k	2s	W	W	0	0	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.19	766.8	30.26	768.6	40.2	4.6	98	E	1	0.4	.....	1c	Fog	.....	.....	0	0	Foggy	Prof. Harrison.
*Fort Garry Manitoba	28.65	727.7	29.45	748.0	54	12.2	99	N	12	5.4	.....	5k	5n	N	N	0.170	4.32	Cloudy.....	James Stewart.
Granton, Ontario	29.90	735.6	30.04	763.0	61	16.1	100	SW	.....	.....	1	6cs	0	NE	.....	Inap	Inap.	Fair.....	James Grant.
*Halifax, N. S	30.07	763.8	30.20	767.1	53	11.7	67	NW	4	1.8	.....	2clc	0	NW	.....	0	0	Fair.....	F. Allison, M. A.
Hamilton, Ontario	29.75	755.6	30.11	764.8	60.9	16.1	88	SW	.....	.....	1	4c	0	W	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.88	758.9	29.90	759.4	49	9.4	78	NW	.....	.....	5	10?	2k	.....	.....	0.02	0.5	Cloudy.....	E. Weedon.
*Kingston, Ontario	29.85	758.2	30.18	766.6	59	15.0	94	S	17	7.6	.....	.....	10ks	.....	SW	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.12	765.0	30.16	766.1	54.7	12.6	72	W	8	3.6	.....	7clc	0	W	.....	0	0	Fair...	C. H. Rigby.
*Montreal, Quebec	30.00	762.0	30.20	767.1	52	11.1	86	SW	6	2.7	.....	5k	2ks	NW	.....	0	0	Cloudy.....	C. H. McLeod, C. E
*Parry Sound, Ontario	29.34	745.2	30.02	762.5	58	14.4	97	SE	12	5.4	.....	.....	10n	.....	SE	0.01	0.3	Light rain...	Rev. R. Mosley.
Peterboro, Ontario	29.38	746.2	30.12	765.0	56.9	13.8	94	Calm	.....	.....	0	.....	10	.....	.....	0	0	Overcast.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.09	764.3	60	15.6	100	S	4	1.8	.....	5k	0	W	.....	0.01	0.3	Fair.....	H. Morgan.
Port Hastings, N. S	30.14	765.5	30.19	766.8	56.5	13.6	.....	N	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.44	747.8	30.07	763.8	62	16.7	95	E	8	3.6	.....	.....	8ks	.....	SE	Inap.	Inap.	Cloudy.....	M. Payne.
*Quebec, Quebec	29.91	759.7	30.24	768.1	42	5.6	79	W	.....	.....	1	0	0	....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.66	753.4	30.12	765.0	48	8.9	93	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	30.18	766.6	30.23	767.8	46	7.8	92	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.19	766.8	30.26	768.6	49	9.4	92	SW	5	2.2	.....	3c	0	.....	.....	0	0	Fair.....	G. Murdock, C. E.
*Saugeen, Ontario	29.28	743.7	29.98	761.5	63	17.2	92	S	10	4.5	.....	5cs	0	.....	.....	0.44	11.2	Fair	K. Stewart.
Stayner, Ontario	29.27	743.4	30.04	763.0	58	14.4	99	SE	9	4.0	.....	.....	10n	.....	SW	0.06	1.5	Clearing.....	R. J. Cole.
Stratford, Ontario	28.78	731.0	30.03	762.7	59.6	15.3	99	S	7	3.1	.....	.....	Fog	.....	.....	0	0	Foggy	C. J. MacGregor, M. A.
*Sydney, C. B	30.16	766.1	30.19	766.8	53	11.7	79	SW	3	1.3	.....	10cs?	0	.....	.....	0	0	Fair?.....	T. C. Hill.
*Toronto, Ontario	29.72	754.9	30.10	764.5	58	14.4	94	SE	2	0.9	.....	.....	10n	.....	W	0	0	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	92	N	.....	.....	.....	4k	4s	.....	.....	0.10	2.5	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0–10.	CLOUDS: Amount. Up'er 0–10.	CLOUDS: Amount. Low'r 0–10.	CLOUDS: Direction. Upper. From—	CLOUDS: Direction. Lower. From	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.99	761.7	30.22	767.6	50	10.0	89	S	1	0.4			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.22	742.2	29.84	757.9	61	16.1	94	S	13	5.8			10s		S	0.15	3.8	Cloudy	
Atlantic City, New Jersey	30.19	766.8	30.21	767.3	63	17.2	83	NE	9	4.0		0	0			0	0	Clear	
Augusta, Georgia	29.93	760.2	30.11	764.8	64	17.8	83	NE	8	3.6		0	Haze			0	0	Hazy	
Baltimore, Maryland	30.17	766.3	30.22	767.6	61	16.1	82	NE	4	1.8		8k	2s	NE	NE	0	0	Cloudy	
Barnegat, New Jersey	30.21	767.3	30.23	767.8	67	19.4	60	NE	10	4.5		0	0			0	0	Clear	
Bismarck, Dakota	27.70	703.6	29.56	750.8	45	7.2	84	N	4	1.8		5cs	0	N		0	0	Fair	
Boerne, Texas	28.45	722.6			72	22.2	85	SE	9	4.0			10s		SE	0	0	Cloudy.	
Boise City, Idaho	26.97	685.0	29.93	760.2	43	6.1	91	W	1	0.4			10s		SW	0.27	6.9	Cloudy	
Boston, Massachusetts	30.12	765.0	30.27	768.8	60.5	15.8	63	SW	2	0.9		0	Haze		SW	0	0	Hazy	
Brackettville, Texas	28.71	729.2	29.69	754.1	76	24.4	82	S	4	1.8			10s		S	0	0	Cloudy	
Breckenridge, Minnesota	28.34	719.8	29.26	743.2	64	17.8	100	N	4	1.8			Fog		Calm	Inap.	Inap.	Foggy	
Brownsville, Texas	29.83	757.7	29.90	759.4	78	25.6	86	SE	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.42	747.3	30.12	765.0	57	13.9	87	S	4	1.8		2ck	2s	SW	SW	0.01	0.3	Fair	
Burkes, Arizona																			
Burlington, Vermont	30.01	762.2	30.27	768.8	51	10.6	79	S	4	1.8		2ck	Sm'e	Calm	Calm	0	0	Fair	
Cairo, Illinois	29.67	751.1	29.95	760.7	69	20.6	90	S	8	3.6		0	0			0	0	Clear	
Camp Apache, Arizona					54	12.2	49	N			1	2k	2s	W	Calm	0	0	Fair	
Camp Grant, Arizona	25.10	637.5	29.90	759.4	59	15.0	18	N			2	0	0			0	0	Clear	
Camp Verde, Arizona	26.55	674.4	30.04	763.0	63	17.2	52	S			1	0	0			0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	50	10.0	86	SW	4	1.8			Fog		Calm	0	0	Foggy	
Cape Hatteras, N. Carolina	30.06	763.5	30.07	763.8	71	21.7	71	NE	29	13.0		0	0			Inap.	Inap.	Clear	
Cape Henry, Virginia	30.11	764.8	30.14	765.6	67	19.4	84	NE	20	8.9		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.04	763.0	30.05	763.3	70	21.1	75	NE	30	13.4		0	0			0.03	0.8	Clear	
Cape May, New Jersey	30.18	766.6	30.21	767.3	63	17.2	78	NE	8	3.6		0	0			0	0	Clear	
Castroville, Texas	29.09	738.9	29.76	755.9	76	24.4	86	SE	4	1.8			10s		SE	0	0	Cloudy	
Charleston, South Carolina	30.00	762.0	30.07	763.8	68	20.0	84	NE	15	6.7		0	1s		NE	0	0	Clear	
Cheyenne, Wyoming	26.73	692.7	29.67	753.6	41	5.0	57	W	4	1.8		0	8s		Calm	0.02	0.5	Cloudy	
Chicago, Illinois	29.12	739.6	29.78	756.4	68	20.0	84	SW	11	4.9		2cs	0	W		0.01	0.3	Clear	
Cincinnati Ohio	29.45	748.0	30.09	764.3	63	17.2	89	SE	3	1.3		0	Fog		Calm	0.01	0.3	Clear	
Cleveland, Ohio	29.36	745.7	30.07	763.8	60	15.6	88	SE	10	4.5		0	0			0.01	0.3	Clear	
Coleman City, Texas	28.09	713.5	29.68	753.9	70	21.1	85	S	10	4.6		8ck	2s	SW	S	0	0	Cloudy	
Columbus, Ohio	29.24	742.7	30.07	763.8	57	13.9	87	SE	3	1.3			Fog		Calm	0.02	0.5	Foggy	
Concho, Texas	27.92	709.2	29.52	749.8	72	22.2	80	S	8	3.6		0	10s		S	0	0	Cloudy	
Corsicana, Texas	29.44	747.8	29.89	759.2	72	22.2	90	S	3	1.3		0	8s		S	0	0	Fair	
Davenport, Iowa	29.09	738.9	29.69	754.1	70	21.1	85	S	17	7.6		4k	4s	S	S	0	0	Fair	
Decatur, Texas	28.78	731.0	29.86	758.4	71	21.7	85	S	18	8.0		0	4s		S	0	0	Fair	
Denison, Texas	29.07	738.4	29.83	757.7	73	22.8	90	SE	10	4.5		5k	0	SE		0	0	Fair	
Denver, Colorado	24.46	621.3	29.68	753.9	46	7.8	33	SW	4	1.8		0	5s		Calm	0	0	Fair	
Des Moines, Iowa	28.66	728.0	29.48	748.8	71	21.7	80	SW	18	8.0		0	0			0	0	Clear	
Detroit, Michigan	29.32	744.7	29.97	761.2	65	18.3	54	SW	6	2.7		0	0			0	0	Clear	
Dodge City, Kansas	27.06	687.3	29.27	743.4	52	11.1	47	W	8	3.6		0	0			0	0	Clear	
Dubuque, Iowa	28.94	735.1	29.61	752.1	68	20.0	90	S	7	3.1			10ks		S	2.18	55.4	Threatening	
Duluth, Minnesota	28.77	730.7	29.41	747.0	58	14.4	94	NW	7	3.1			10n		NW	0.42	10.7	Light rain	
Eagle Pass, Texas	29.08	738.6	29.80	756.9	72	22.2	90	E	4	1.8		5k	0	Calm		0	0	Fair	
Eastport, Maine	30.17	766.3	30.24	768.1	53	11.7	80	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Edinburg, Texas					72	22.2	95	S			1	5k	0	S		0	0	Fair	
El Paso, Texas					70	21.1	32	W	6	2.7		0	0			0	0	Clear	
Erie, Pennsylvania	29.39	746.5	30.09	764.3	60	15.6	82	SE	11	4.9		0	2s		Calm	0.01	0.3	Fair	
Escanaba, Michigan	29.03	737.3	29.65	753.1	60	15.6	94	S	12	5.4			10s		S	0.03	0.8	Cloudy	
Florence, Arizona	28.33	719.6	29.93	760.2	60	15.6	49	N			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.37	644.4	29.44	747.8	55	12.8	27	S	3	1.3		0	0			0	0	Clear	
Fort Davis, Texas	25.14	638.5	30.10	764.5	59	15.0	66	N	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.27	743.4	29.78	756.4	72	22.2	85	S	8	3.6		2ck	0	S		0	0	Clear	
Fort Griffin, Texas	28.53	724.6	29.74	755.4	70	21.1	85	SE	8	3.6		2ck	2s	S	SW	0	0	Fair	
Fort McKavett, Texas	27.66	702.6	29.47	748.5	75	23.9	68	S	10	4.5		5ck	0	NE		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.56	725.4	29.62	752.3	68	20.0	84	SE	17	7.6		0	0			0	0	Clear	
Fredericksburg, Texas	28.15	715.0	29.64	752.8	72	22.2	67	S			1		10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.87	758.7	29.91	759.7	79	26.1	87	SE	7	3.1			10ks		SE	0.01	0.3	Cloudy	
Graham, Texas	28.73	729.7	29.73	755.1	73	22.8	81	S	10	4.5		0	2ks		S	0	0	Fair	
Grand Haven, Michigan	29.21	741.9	29.82	757.4	70	21.1	75	S	35	15.6		2c	2s	NW	Calm	0.19	4.8	Fair	
Indianapolis, Indiana	29.21	741.9	29.96	761.0	67	19.4	84	SE	5	2.2		0	0			0	0	Clear	
Indianola, Texas	29.88	758.9	29.90	759.4	78	25.6	86	SE	6	2.7		1k	0	Calm		0	0	Clear	
Jacksboro, Texas	28.67	728.2	29.75	755.6	70	21.1	90	SE	10	4.5		0	2s		S	0	0	Clear	
Jacksonville, Florida	29.94	760.5	29.96	761.0	71	21.7	90	N	10	4.5			10n		N	2.54	64.5	Light rain	
Keokuk, Iowa	29.08	738.6	29.64	752.8	73	22.8	85	SW	22	9.8		4k	2s;sm'e	SW	SW	0	0	Fair	
Key West, Florida	29.77	756.1	29.80	756.9	80	26.7	82	NE	19	8.5		5k	0	NE		0.09	2.3	Fair	
Kittyhawk, North Carolin	30.08	764.0	30.10	764.5	69	20.6	75	NE	32	14.3		0	0			0	0	Clear	
Knoxville, Tennessee	29.16	740.7	30.15	765.8	63	17.2	78	Calm	0	0		0	Haze		Calm	0	0	Clear	
La Crosse, Wisconsin	28.81	731.8	29.50	749.3	68	20.0	90	S	18	8.0			10n		Calm	0.39	9.9	Light rain	
La Mesilla, New Mexico	25.97	659.6	30.12	765.0	48	8.9	56	NW	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.41	747.0	29.73	755.1	77	25.0	86	S	6	2.7		0	0			0	0	Clear	
Lead City, Dakota	24.45	621.0	29.72	754.9	44	6.7	84	Calm	0	0			10s		Calm	0	0	Cloudy	
Leavenworth, Kansas	28.77	730.7	29.55	750.6	73	22.8	76	S	16	7.2		0	0			0	0	Clear	
Los Angeles, California	29.59	751.6	29.93	760.2	53	11.7	80	N	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.50	749.3	30.05	763.3	65	18.3	84	S	3	1.3		0	Sm'e		Calm	0	0	Smoky	
Lynchburg, Virginia	29.55	750.6	30.23	767.8	62	16.7	83	NE	1	0.4			10ks		Calm	0	0	Cloudy	
Madison, Wisconsin	28.73	729.7	29.65	753.1	69	20.6	90	S	14	6.3			10s		SW	1.32	33.5	Cloudy	
Marquette, Michigan	28.85	732.8	29.51	749.5	68	20.0	90	SE	16	7.2			10s		SE	0.07	1.8	Cloudy	
Mason, Texas	28.24	717.3	29.88	758.9	73	22.8	85	SE	10	4.5			10s		SE	0	0	Cloudy	
Memphis, Tennessee	29.71	754.6	30.02	762.5	68	20.0	90	SE	4	1.8		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.06	738.1	29.75	755.6	67	19.4	89	S	16	7.2			10s		SW	0.41	10.4	Cloudy	
Mobile, Alabama	30.00	762.0	30.04	763.0	70.6	21.4	77	NE	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.86	758.4	30.09	764.3	66	18.9	84	NE	2	0.9		Haze	0	Calm		0	0	Clear	
Morgantown, West Virginia	29.10	739.1	30.15	765.8	56	13.3	87	Calm	0	0			Fog		Calm	0	0	Foggy	
Mt. Washington, N. H.	23.99	609.3	30.35	770.9	37	2.8	37	NW	12	5.4		0	Haze		Calm	0	0	Clear	
Nashville, Tennessee	29.56	750.8	30.08	764.0	68	20.0	74	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
New Haven, Connecticut	30.15	765.8	30.26	768.6	59	15.0	82	NW	1	0.4			10s		Calm	0	0	Cloudy	
New London, Connecticut	30.23	767.8	30.28	769.1	52	11.1	86	Calm	0	0		2ck	2s;fg	N	Calm	0	0	Fair	
New Orleans, Louisiana	29.92	760.0	29.93	761.5	79	26.1	70	NE	6	2.7		0	0			0	0	Clear	
Newport, Rhode Island	30.22	767.6	30.27	768.8	59	15.0	76	NE	2	0.9		7k	0	W		0	0	Fair	
New York, New York	30.09	764.3	30.26	768.6	61	16.1	76	SE	2	0.9		Haze	Haze			0	0	Dense haze	
Norfolk, Virginia	30.12	765.0	30.18	766.6	67	19.4	74	NE	9	4.0		0	Haze			0	0	Clear	
North Platte, Nebraska	26.69	677.9	29.17	740.9	47	8.3	73	NW	8	3.6		2c	0	Calm		0	0	Clear	
Olympia, Washington Ter.	29.44	747.8	29.48	748.8	50	10.0	93	S	7	3.1			10n		Calm	1.15	29.2	Light rain	
Omaha, Nebraska	28.36	720.3	29.36	745.7	71	21.7	75	S	13	5.8		2c	0	SW		0	0	Clear	
Oswego, New York	29.86	758.4	30.19	766.8	55	12.8	87	S	7	3.1		5ck	0	NW		0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Pembina, Dakota	28.62	726.9	29.42	747.3	37	13.9	100	NW	8	3.6	.....	.....	Fog	.....	.....	0.13	3.3	Dense fog	
Philadelphia, Pa	30.21	767.3	30.26	768.6	60	15.6	71	NE	6	2.7	.....	.....	10ks	.....	N	0.03	0.8	Cloudy	
Phœnix, Arizona	28.65	727.7	.....	.....	59	15.0	33	Calm	.....	.....	0	5cs	0	NW	.....	0	0	Fair	
Pike's Peak, Colorado	17.67	444.7	29.78	756.4	20	— 6.7	56	SW	56	25.0	.....	10cs	0	SW	.....	0.04	1.0	Cloudy	
Pioche, Nevada	23.79	604.3	29.56	750.8	47.5	8.6	41	S	8	3.6	.....	0	2s	.....	Calm	0.04	1.0	Fair	
Pittsburg, Pennsylvania	29.38	745.0	30.14	765.5	55	12.8	93	E	3	1.3	.....	0	Fog	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.33	745.0	29.97	761.2	66	18.9	84	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.20	767.1	30.25	768.3	49	9.4	78	SW	2	0.9	.....	0	Fog	.....	.....	0	0	Clear	
Portland, Oregon	29.55	750.6	29.66	753.4	53	11.7	93	S	14	6.3	.....	.....	10ks	.....	S	0.98	24.9	Cloudy	
Prescott, Arizona	24.66	626.4	30.02	762.5	54	12.2	61	E	6	2.7	.....	2cs	0	Calm	.....	0	0	Fair	
Pilot Point, Texas	29.16	741.2	29.97	761.2	76	24.4	81	SE	18	8.0	.....	0	Haze	.....	Calm	0	0	Hazy	
Punta Rassa, Florida	29.84	757.9	29.86	758.4	76	24.4	86	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.57	751.1	29.93	760.2	53	11.7	93	SE	8	3.6	.....	.....	10ks	.....	SE	0.29	7.4	Cloudy	
Rio Grande City, Texas	29.68	753.9	29.88	758.9	74	23.3	90	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.54	750.3	30.14	765.5	58	14.4	82	SW	5	2.2	.....	2c	0	SW	.....	0	0	Fair	
Roseburg, Oregon	29.25	742.9	29.81	757.2	52	11.1	82	SW	7	3.1	.....	0	8s	.....	Calm	0.41	10.4	Cloudy	
Sacramento, California	29.83	757.7	29.92	760.0	54	12.2	90	S	2	0.9	.....	0	1s	.....	Calm	0.18	3.3	Clear	
St. Louis, Missouri	29.34	745.2	29.89	759.2	69	20.6	85	S	11	4.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	29.97	761.2	29.99	761.7	68	20.0	79	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.52	724.4	29.27	743.4	71	21.7	80	S	14	6.3	.....	.....	10s	.....	SW	0.23	5.8	Cloudy	
Salt Lake City, Utah	25.86	644.1	29.69	754.1	44.5	6.9	88	NW	4	1.8	.....	.....	10n	.....	Calm	0.85	21.6	Heavy rain	
San Antonio, Texas	29.19	741.4	29.75	755.6	75	23.9	90	Calm	0	0	.....	.....	10s	.....	SE	0	0	Cloudy	
San Diego, California	29.91	759.7	29.98	761.5	60	15.6	77	W	3	1.3	.....	0	8s	.....	Calm	0	0	Fair	
Sandusky, Ohio	29.39	746.5	30.04	763.0	63	17.2	89	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.22	767.6	30.25	768.3	63	17.2	72	S	4	1.8	.....	.....	8ks	.....	Calm	0	0	Cloudy	
San Francisco, California	29.86	758.4	29.92	760.0	55	12.8	87	W	9	4.0	.....	0	0	.....	.....	0.45	11 4	Clear	
Santa Fé, New Mexico	23.13	587.5	29.67	753.6	45	7.2	53	Calm	0	0	.....	2cs	0	S	.....	0	0	Fair	
Savannah, Georgia	29.94	760.5	30.04	763.0	68	20.0	90	NE	10	4.5	.....	10k	0	NE	.....	0	0	Cloudy	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	73	22.8	85	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.23	615.4	.....	.....	55	12.8	10	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.06	763.5	30.09	764.3	67	19.4	79	N	12	5.4	.....	0	1s	.....	Calm	0	0	Clear	
Springfield, Massachusetts	30.13	765.3	30.26	768.6	52	11.1	86	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Stockton, Texas	29.83	681.5	29.83	757.7	58	14.4	53	S	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	30.22	767.6	30.27	768.8	57	13.9	75	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.32	744.7	29.97	761.2	67	19.4	84	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	68	20.0	56	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.99	761.7	30.02	762.5	69	20.6	90	NE	28	10.3	.....	0	8s	.....	NE	0	0	Cloudy	
Umatilla, Oregon	29.26	743.2	.....	.....	52	11.1	73	SW	8	3.6	.....	.....	10ks	.....	W	0.23	5.8	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	100	SW	.....	.....	4	.....	10s	.....	S	0.04	1.0	Cloudy	
Uvalde, Texas	28.98	736.1	29 77	756.1	74	23.3	90	S	4	1.8	.....	2k	2s	NE	S	0	0	Fair	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	68	20.0	84	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	23.93	607.8	29.41	747.0	36	2.2	80	Calm	0	0	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Visalia, California	29.59	751.6	29.96	761.0	61	16.1	56	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Washington, D. C.	30.12	765.0	30.24	768.1	62	16.7	83	Calm	0	0	.....	5ck	5ks;fg	NE	NE	Inap.	Inap.	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	49	9.4	51	SE	.....	.....	1	10c	0	Calm	.....	0	0	Cloudy	
Wilmington, N. Carolina	30.00	762.0	30.08	764.0	67	19.4	79	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.47	646.9	29.83	757.7	42	5.6	88	S	7	3.1	.....	.....	10ks	.....	S	0.63	16.0	Cloudy	
Wood's Holl, Mass	30.22	767.6	30.27	768.8	61	16.1	66	S	2	0.9	.....	0	2s	.....	.....	0	0	Clear	
Yankton, Dakota	28.10	713.7	29.20	744.0	68	17.2	67	SW	9	4.0	.....	2c	0	W	.....	0	0	Fair	
Yuma, Arizona	29.63	752.6	29.79	756.7	61	16.1	71	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Fortescue, W. Wood
York Factory, B. A.	29.61	752.1	29.66	753.4	31.0	— 0.6	95	NW	8	3.6	.....	2c	0	N	.....	0	0	Fair	Chas. Hasselbrink.
Havana, Cuba, W. I.	29.80	756.9	29.82	757.4	80	26.7	86	SE	3.6	1.6	.....	.....	10n	.....	SE	0.90	22.9	Light rain	Robert Mason.
Santiago de Cuba, W. I.	29.77	756.1	29.79	756.7	81	27.2	91	NE	.....	.....	1	8ck	8ks	.....	SW	0	0	.....	G. O. Gellich.
St. Thomas	.....	.....	.....	.....	82	27.8	87	S	6	2.7	.....	4c	4n	E	.....	0.52	13.2	Cloudy	James Gall.
Kingston, Jamaica, W. I.	29.99	761.7	30.00	762.0	82	27.8	91	Calm	0	0	.....	8c	5s	N	SW	0.06	1.5	.....	F. M. Everett.
Navassa, W. I.	29.75	755.6	29.83	757.7	83	28.3	.....	S	10.9	4.9	.....	.....	.....	.....	.....	2.20	55.9	Cloudy	C. J. Hering
Paramaribo, D. Guiana, S. A.	29.98	761.5	29.99	761.7	82	27.8	79	E	.....	.....	2	0	4k	.....	.....	0	0	Clear	Thomas Herran
Medellin, Colombia, S. A.	29.24	641.1	.....	.....	64.6	18.1	89	Calm	0	0	.....	.....	10s;n	.....	.....	0.24	6.1	.....	

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,393 (?) ft., or 466.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,333 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1 750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,060 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0–10.	CLOUDS. Amount. Up'er 0–10.	CLOUDS. Amount. Low'r 0–10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.15	765.8	74	23.3	74	23.3	74	NE	12	5.4			0			0	0			Clear	
NavyYard,Portsmouth,N.H	30.22‡	767.6‡			50	10.0	86	SW	1	0.4			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.95*	760.7*	71	21.7	68	20 0	84	N			3		10ks		NW	0	0			Overcast	
Adams. S. 45° 23′, W. 113° 26′	29.59	751.6	55	12.8	48	8.9	92	NW			5–6				NW	0	0	Long	NW	Cloudy	
Alliance, Messina, Sicily	30.11‡	764.8‡			75	23.9	61	NE			2–3		3		NE			None		Hazy	
Ashuelot. Yokohama, Japan	30.03	762.7	71	21.7	70	21.1	80	NE			1		10		Calm			Smooth		Cloudy	
Alaska. S. 35° 23′, W. 73° 01′	30.42	772.7	58	14.4	58	14.4	88	S			4		2			0	0	Long	SW	Hazy	
Colorado, New York, N. Y.	30.26‡	768.6‡			61	16.1	77	E	2	0.9			10		E	0	0			Hazy	
Constitution, Havre, France	30.00‡	762.0‡			59	15.0	94	WNW			6		6		NW					Pleasant	
Despatch. Volo, Turkey	30.12‡	765.0‡			71	21.7	49	NW			2		2		Calm					Clear	
Essex, S. 30° 15′, W. 36° 27	30.26	768.6	61	16.1	60	15.6	88	SSE			5		5		S			Long	S	Fair	
Franklin, Norfolk, Va.	30.27	768.8	69	20.6	68	20.0	79	NE	8.4	3.8			2		E	0	0			Clear	
Gettysburg N. 36° 37′ E. 0° 55′ 30″	30.00‡	762.0‡			86	30.0	72	NNE			2		4		Calm	0	0	Light	E	Clear	
Guard, Bahia, Brazil	30.13	765.3	77	25.0	77	25.0	82	SSE			4		10		SSE					Rainy	
Hartford, Rio de Janeiro, Brazil	30.17	766.3			72	22.2	71	Calm	0	0			10			0	0			Cloudy	
Marion, Naples, Italy	30.14	765.5	74	23.3	77	25.0	54	Calm			0		0			0	0			Clear	
Michigan, Erie, Pa.	30.00†	762.0†			59	15.0	88	ESE			5		2							Fair	
Monocacy, Yokohama, Japan	29.94‡	760.5‡			70	21.1	80	NNW			0–1		10		NNW					Cloudy	
New Hampshire, Port Royal, S. C.	30.22†	767.6†			74	23.3	81	NNE	22	9.8			8		NE	0	0			Cloudy	
Onward, Callao, Peru	30.12†	765.0†			64	17.8	83	NNW			1		10							Misty	
Passaic, Washington, D. C.	30.32	770.1	60	15.6	61	16.1	94	NE			1		10		W					Cloudy	
Palos, Tientsin, China	30.00	762.0	75	23.9	69	20.6	85	SSE			2		2							Clear	
Plymouth. Portland, Maine	30.26	768.6	50	10.0	49	9.4	78	SW			0–1		0							Clear	
Powhatan, Portsmouth, N. H.	30.27‡	768.8‡			52	11.1	79	WSW	1.8	0.8			2							Clear	
Ranger. Hong-Kong, China	30.09	764.3	85	29.4	84	28.9	87	E			3		2		Calm					Clear	
Rio Bravo. Brownsville, Texas	29.89	759.2	77	25.0	77	25.0	95	SE			1		0							Clear	
Santee, Annapolis, Md.	30.18‡	766.6‡			67	19.4	69	NE			1		8		E	0	0			Cloudy	
Saratoga, Philadelphia, Pa.	30.15*	765.8*			59	15.0	82	NE			3		10			Light	Light			Hazy	
St. Louis, League Island, Pa	30.14	765.5	63	17.2	61	16.1	82	ENE	1	0.4			8		NE	0	0			Cloudy	
Supply, Havre, France	29.95	760.7	64	17.8	63	17.2	72	W			5–6		5		W					Fair	
Swatara, Boston, Mass.	30.26‡	768.6‡			57	13.9	81	W			1		2							Hazy	
Trenton, N. 44° 45′, W. 13° 48′	30.19‡	766.8‡			64	17.8	89	WNW			3		2		W	0	0	Mod'ate	W	Clear	
Tuscarora, La Paz, Mexico	29.70	754.4	81	27.2	81	27.2	78	Calm			0		5		Calm	0	0			Fair	
Vandalia. N. 40° 13′, E. 1° 53′	30.11‡	764.8‡			77	25.0	73	SSW			1		2		SSW			Smooth		Clear	
Wabash, Boston, Mass.	30.27‡	768.8‡			63	17.2	67	WSW	1	0.4			0			0	0			Clear	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.

*It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, Esquimault, B. C.		29.46*	748.3*				E			2		10						D. clouds	Capt. Seabury.
S. S City of Peking																			Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 13° 28', W. 89° 28'		29.89†	759.2†	80	26.7	100	N			2		6		WNW	0	Heavy ground	SW	Raining	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota																			Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. The City of Peking gives velocity of wind without making correction for speed of vessel. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 40° 08', W. 169° 48'		30.10*	764.5*	54	12.2	87	NE			5		ks		NE		Mod'ate	NE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			
S. S. Oceanic, N. 37° 28', E. 171° 48'		30.04	763.0	74	23.3	90	SSE			5		9	W	SSE		5	WSW	Raining	Capt. W. H. Kidley. Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 50° 31', W. 23° 28'		29.86	758.4	71.5	21.9	50	WSW			4		0			7 hours	4–5	WSW	Fine	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				57	13.9	100	WNW			6		10		WSW	Heavy			Cloudy	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.33?	770.4?	62	16.7	88	NNW			1		10		N	0			Dull	Captain Morrison. Captain Harris.
S. S. Pennsylvania																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; unreliable, corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 24′ W. 33° 37′		29.75*	755.6*				S	16	7.2			6		SSE		Confused	SW	Showery	Capt. Jackson. Capt. Nichols.
S. S. Vaderland																			

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Near Santa Cruz, W. I.		29.88	758.9	85	29.4	76	Calm	0	0		2c	5k	SW	SE	0	Smooth		Cloudy	Capt. James Jorgensen.
Schooner Florence																			O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 1, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador					76.5	24.7	79	ESE			6		4			0.382	9.7	Cloudy	Kesxuche.
Nemours			30.08	764.1	78.1	25.6	77	NNE			3		6			0	0	Cloudy	Tourilliere.
Algiers			30.03	762.7	79.5	26.4	73	NNW			1		2			0	0	Fair	Foufrede.
La Calle			30.08	764.1	84.7	29.3	64	W			3		0			0	0	Clear	Jacques.
Tunis			30.07	763.6	86.0	30.0		SSE			3		0			0	0	Clear	Gau.
Sfax			30.14	765.5	67.1	19.5	58	NW			3		3			0	0	Pretty fair	Herbin.
Saida			30.04	763.0	81.3	27.4	31	E			3		2			0	0	Fair	Watrin.
Tebessa			30.04	763.0	73.6	23.1	84	SE			7		10			0	0	Covered	Brugniaux.
Geriville			30.02	762.4	83.5	28.6	34	Calm			0		2			0	0	Fair	Bertrand.
Laghouat			30.15	765.7	92.5	33.6	32	SE			1		1			0	0	Very fair	Chanvaux.
Biskra			30.08	764.0															

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.41	747.1	29.95	760.7	69.1	20.6	70	NW			1		7			0.220	5.6		Prof. Ivan Storir.
Cracow, I. R. Observatory	29.12	739.7	29.87	758.6	61.7	16.5	67	WSW			4		10			0.016	0.4		Dr. Wierzbiski
Eperies	29.02	737.1	29.88	759.0	60.8	16.0	79	S			2		9s		E	0	0		Julius Mikolik.
Gratz	28.76	730.6	29.90	761.7	68.9	17.7	79	N			2		10			0	0		Andreas Rospini.
Hermannstadt	28.50	723.8	29.93	760.3	70.5	21.4	55	SW			1		1			0	0		Prof. A. Gottschling.
Kremsmünster	28.69	728.8	30.02	762.5	58.6	14.8	70	WNW			1		8			0	0		Prof. C. Wagner
Lemberg	28.84	732.4	29.80	756.8	62.4	16.9	64	NW			2		6			0.012	0.3		Dr. T. Stanecki.
Pola	29.91	759.6	30.01	762.3	72.1	22.3	74	WSW			2		8ks			0	0		I.R.Hydrographic Office
Szathmar	29.51	749.6	29.97	761.1	69.4	20.8	56	NW			4		3			0	0		Julius Osics, S. J.
Szegedin	29.69	754.1	29.97	761.1	64.4	18.0	77	Calm			0		6			0	0		Karl Stancel.
Trieste	29.92	759.9	30.02	762.5	68.5	20.3	89	NW			1		2			0.571	14.5		P. Busin.
Vienna	29.28	743.7	29.98	761.6	61.9	16.6	60	W			4		10			0	0		I.R. Central Met. Ob'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																0.791	20.1		Prof. M. Passau.
Brussels	29.83	757.7	30.03	762.8	54.5	12.5	92	S			0		10		WNW	0.144	3.65		Royal Observatory
Furnes	30.05	763.2	30.07	763.8	60.1	15.6	71	NNW			1		3			0.012	0.3		M. E. de Cae.
Maeseyck	29.93	760.1	30.06	763.4	56.5	13.6	77	WNW			2		10			0.083	2.1		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Low'r. 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.97	761.2	30.07	763.8	49.4	9.7		WNW	26	11.6			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.06	763.5	30.08	764.0	54	12.2		NW			3		0					Blue sky	George Carrick.
Armagh, Observatory			30.14	765.5	51.7	10.9		NE	8	3.6			10					Gloomy	S. Call.
Bidston, (Liverpool Obs.)			30.03	762.7	47.0	8.3		ENE	16	7.2			10					Rain and fog	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.69	754.1	30.08	764.0	46.1	7.8		NE			2		10			0.13	2.8	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	85.5	29.7		SE			2		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.07	763.8	55.0	12.8		NW			1		10					Raining	H. Todd. [H. O.
Cardington			30.07	763.8	56.4	13.6		N			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.92	760.0	30.05	763.3	61.2	16.2		NW			1		6					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.61	726.7	30.06	763.5	58.0	14.4		NW			3		6					D. clouds	Alexander Watt.
Donaghadee	30.08	764.0	30.10	764.5	52	11.1		NE			4		5					D. clouds	J. Mac Gowan.
Dover	30.02	762.5	30.05	763.3	59	15.0		E			2		7					¾ clouded	J. Costello.
Falmouth, Observatory	29.91	759.7	30.14	765.5	59.8	15.4		NW			1		3					D. clouds	The Staff.
Fort Napier, (Natal)	27.60	701.0	29.91	759.7	79.5	26.4		NE			2		0					Blue sky	Pvt. G. Salmon, A. H. O.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	85	29.4		W			2		4					D. clouds	
Galway, Queen's College			30.08	764.0	57	13.9		NW			1		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.00	762.0	30.05	763.3				E			4		3					D. clouds	Corpl. Wm. Allen, A. H. O.
Glasgow, Observatory	29.90	759.4	30.10	764.5	50.7	10.4		NNE			2							Blue sky	D. G. Maclean.
Great Yarmouth	30.04	763.0	30.05	763.3	51	10.6		NNW			2		7					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.88	758.9	30.05	763.3	56.2	13.4		N			1		10					Foggy	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.09	764.3	61.5	16.4		NNW			2		3					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			30.18	766.6	63	17.2		NW			2		2ck			0.50	12.7	Fine	M. P. Moyle.
Holyhead	30.00	762.0	30.05	763.3	53	11.7		NE			6		10					Raining	John Tilston.
Jersey	29.82	757.4	30.11	764.8	61.5	16.4		N			4		4					Showery	J. Fisher.
Kew, Observatory	30.03	762 7	30.06	763.5	58.5	14.7		NW	3	1.3			5					D. clouds	The Staff.
Kingstown	30.06	763.5	30.09	764.3	55	12.8		NNW			4		10					Overcast	George Mitchell.
Leicester, Museum			30.06	763.5	50.3	10.2		NE			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.98	761.5	30.06	763.5	78	25.6		SE			2		3k					D. clouds	Sergt. Beckett.
Nairn	30.02	762.5	30.12	765.0	50	10.0		NNW			2		5					⅗ clouded	W. D. Penny.
Nassau, (Bahamas)			29.85	758.2	80.5	26.9		N			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.66	758.4	30.05	763.3	46.0	7.8		NNE			1		10n		NNE	0.239	6.07	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.52	749.8	30.05	763.3	51.0	10.6		E			1		10					Misty	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.05	763.3	59	15.0		S			1		10					Threatening	H. E. Bellamy.
Plymouth	30.01	762.2	30.09	764.3	61.4	16.3		SW			4		5					D. clouds	John Merrifield.
Roche's Point	30.07	763.8	30.11	764.8	60	15.6		NNW			2		5					⅗ clouded	W. Kennedy.
Saint Ann's Head	29.93	760.2	30.09	764.3	58	14.4		WNW			2		4					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.			30.08	764 0	49.1	9.5		NNW	25	11.2			3					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.01	762.2	71.2	21.8		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.82	757.4	30.11	764.8	45.2	7.3		NE			1		10			0.19	4.8	Raining	W. F. Cooper.
Silloth, Rectory	30.06	763.5	30.09	764.3	54.9	12.7		Calm			0		2			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.68	753.9	30.09	764.3	44.9	7.2	78	NE			1		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.79	756.7	30.01	762.2	56.6	13.7		SW			1		8					D. clouds	Rev. C. H. Griffith, F. M. S
Thurso	30.02	762.5	30.08	764.0	50	10.0		NNW			4		7					D. clouds	John Trotter.
Truro, Royal Institution			30.12	765.0	65	18.3		NW			6		5					D. clouds	W. Newcombe.
Valencia, Observatory	30.11	764.8	30.13	765.3	58.8	14.9		WSW	7	3.1			6					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.65	753.1	52.0	11.1	82	NW			5		5k			0	0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.7	72.8	22.7	59	ESE	18.0	8.0		4	4		ESE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.92	759.9	30.01	762.2	57.8	14.3	81	S	3	1.3			8		NW	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Bar. corr. Inches	Millimeters	Reduced Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0—9	Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 37° 20′, W. 69° 5′			30.07	763.8	78	25.6		E			6		4			5	E	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 19° 35′, W. 48° 10′			29.96	761.0	83	28.3					4		5	NE			E	Squally	Capt. D. W. A. Quaile.
S. S. Peruvian																			Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 47° 20′, W 24° 45′			29.95	760.7	65	18.3		SW			6		7			4	NW; SW	D. clouds	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount: the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING Co. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.22	666.0	29.94	760.5	67.1	19.5	95	SE	.....	.....	1	9ck	.....	.....	.....	0.1	3.	.....	Federico Maison.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.68	753.8	29.72	755.0	51.8	11.0	55	WNW	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....
Faröe	29.78	756.3	29.80	756.8	52.2	11.2	68	WNW	.....	.....	6	.....	6	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.18	765.2	30.16	766.1	44.1	6.7	64	N	.....	.....	4	.....	3	.....	.....	.....	.....	.....	.....
Vestervig	29.56	750.7	29.72	755.0	51.1	10.6	72	NW	.....	.....	6	.....	4	.....	.....	.....	.....	Raining.	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.54	750.4	30.10	764.4	59.4	15.2	87	SW	.....	.....	1	.....	10	.....	.....	0	0	Covered	Collignon, Director.
Amiens, Normal School	29.91	759.8	29.94	760.5	59.0	15.0	89	SSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	Bonvallet, Director.
Avignon, Normal School	29.98	761.5	30.06	763.5	76.1	24.5	40	N	.....	.....	2	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.56	750.8	30.11	764.8	59.4	15.2	75	SW	.....	.....	1	.....	10n	.....	.....	0.094	2.4	Covered	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.78	756.4	30.06	763.5	64.4	18	71	S	.....	.....	2	.....	8	.....	WNW	0.089	2.25	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.15	740.4	30.02	762.5	70.7	21.5	65	SSW	.....	.....	2	.....	2	.....	E	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.22	742.3	30.16	765.9	68.7	17.6	59	NW	.....	.....	1	2c	.....	NW	.....	0	0	Slightly cl'dy	M. Marlot, Director.
Bourges, Normal School	29.67	751.1	30.11	764.9	65.3	18.5	67	SSW	.....	.....	2	.....	10s	.....	SW	.....	.....	Sprinkling.	A. Wagner, Director.
Brest, Naval Observatory	29.86	758.5	30.10	764.6	64.8	18.2	65	WNW	.....	.....	1	.....	5k	.....	NNW	0.059	1.50	.....	The Staff.
Carcassonne, Normal School	29.74	755.3	30.13	765.2	73.4	23	41	NW	.....	.....	4	.....	5	E	E	0	0	Cloudy	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Lair, Director.
Chartres, Normal School	29.52	749.9	30.08	763.9	70.2	21.2	83	S	.....	.....	4	.....	8	.....	N	0.12	3.	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.77	756.2	30.09	764.2	59.4	15.2	87	SW	.....	.....	1	.....	5	.....	SW	0.047	1.2	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.77	730.7	30.08	764.0	69.4	20.8	37	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Alluard, Director.
Commercy, Normal School	29.25	743.0	30.13	765.3	57.6	14.2	76	W	.....	.....	3	.....	cn	.....	W	0	0	.....	Dr. Coulet, Director.
Commune de Grésque*	28.97	735.8	30.11	764.8	72.9	22.7	37	W	.....	.....	2	.....	2	SW	SW	0	0	½ covered	M. Kina.
Grenoble, Normal School	29.26	743.2	30.00	762.1	67.3	19.6	76	NW	.....	.....	1	.....	2ck	.....	NW	0	0	Slightly cl'dy	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.76	756.0	30.07	763.8	61.2	16.2	81	S	.....	.....	3	.....	8	.....	S	0.04	1.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.22	742.2	30.12	765.1	64.8	18.2	69	N	.....	.....	1	.....	5	.....	N	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	30.05	763.3	30.15	765.8	65.1	18.4	60	NW	.....	.....	2	.....	.....	N	NW	0.039	1.0	.....	T. Carré, Director.
Mâcon, Normal School	29.14	765.5	30.17	766.3	64.4	18	82	NW	.....	.....	1	.....	5	.....	NW	0	0	Cloudy	M. Galzin, Director.
Mirecourt, Normal School	29.28	743.7	30.32	770.2	60.4	15.8	64	SW	.....	.....	1	.....	10kn	.....	SW	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.96	761.0	30.13	765.2	79.2	26.2	54	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Privas, Normal School	29.64	737.7	30.08	763.9	71.6	22	44	N	.....	.....	1	.....	2	NW	N	0	0	Slightly cl'dy	M. Cantier.
Puy de Dome (Summit)	25.27	641.8	.....	.....	46.0	7.8	88	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Alluard, Director.
Rochefort, Naval Obs'y	30.15	765.9	30.19	766.7	67.1	19.5	68	WSW	.....	.....	2	.....	2	W	W	0	0	½ covered	Lt. Decante, Director.
Rouen, Normal School	29.94	760.4	30.02	762.6	65.7	18.7	57	SSW	.....	.....	1	.....	5	.....	SW	0.256	6.5	Cloudy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.09	764.2	62.2	16.8	73	N	.....	.....	4	.....	5	.....	N	0.056	1.43	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.31	759.6	30.07	763.8	59.0	15.0	81	SW	.....	.....	2	.....	10	.....	SW	0.236	6.0	.....	E. Renou.
Tarbes, Normal School	29.21	741.9	30.27	768.9	64.4	18	80	W	.....	.....	2	.....	2	WNW	SW	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.62?	752.4?	30.32?	770.1?	74.3	23.5	84	S	.....	.....	2	.....	2	.....	S	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L'Abbé Marchési.
Lyons	.....	.....	30.14	765.5	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	4.25	208.	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.04	763.0	72.7	22.6	55	W	.....	.....	2	.....	0	.....	.....	0	0	.....	The Staff.
Mont-Louis	25.02	635.5	30.34	770.5	59.5	15.3	55	SE	.....	.....	3	.....	2	.....	S	0	0	Clear	M. Cave.
Nice	.....	.....	30.03	762.7	69.8	21.0	83	SW	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.79	756.6	30.07	763.6	68.6	14.8	86	SW	.....	.....	3	.....	10	.....	WSW	0.197	5.0	.....	Marié Davy, Director
Perpignan	.....	.....	30.13	765.2	74.3	23.5	55	NW	11.2	5.00	.....	.....	1	.....	SW	0	0	.....	Dr. Flues.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Bayiac.
Pic du Midi, (Plantade,) H. P.	22.69	576.3	.....	.....	53.4	11.9	.....	SW	.....	.....	2	.....	1	.....	.....	0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.49	749.0	30.22	767.5	68.2	20.1	48	NW	.....	.....	3	.....	3	.....	.....	0	0	.....	The Staff.
Tours	29.88	758.9	30.08	763.9	63.7	17.6	72	SW	.....	.....	3	.....	6	.....	W	0	0	.....	C. Marquet.
Versailles	.....	.....	30.07	763.8	59.7	15.4	68	SW	.....	.....	1	.....	10	.....	.....	0.123	3.13	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.96	761.0	29.98	761.6	73.9	23.3	99	ESE	10.5	4.7	.....	.....	8k	.....	E	0	0	Fair	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grésque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.4	29.95	760.8	56.3	13.5	66	W			5		9	W		0	0		Prof. Dr. Hoh.
Berlin	29.70	754.4	29.87	758.8	54.7	12.6	70	NW			4		8			0.094	2.4		Prof. Arndt.
Breslau	29.34	745.2	29.87	758.6	59.5	15.3	65	WSW			5		10			0.058	1.47		Royal University Obs'y
Carlsruhe	29.65	753.1	30.08	763.9	59.9	15.5	72	W			3		10			0.669	17.0		Albert Sens.
Cassel	29.38	746.2	29.98	761.6	54.5	12.5	72	WNW			5		7	W		0.267	6.77		Dr. H. Möhl.
Crefeld	29.83	757.7	29.99	761.8	57.7	14.3	67	N			3		10			0.08	2.		Director Lose.
Emden	29.98	761.5	30.02	762.4	52.5	11.4	70	NW			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.67	753.7	30.04	763.0	57.4	14.1		W			1		10			0	0		Physical Society.
Friedrichshafen	28.69	728.8	30.12	765.0	59.4	15.2	65	WSW			5		7	W		0.091	2.3		M. Wilhelm.
Hamburg	29.82	757.4	29.89	759.2	52.5	11.4	73	WNW			6		8kn	NW		0.480	12.2	Squally.	Captain F. Hegemann.
Kiel	29.84	757.8	29.85	758.2	51.6	10.9	87	W			3		5			0.442	11.23		Prof. G. Karsten.
Königsberg, (Prussia)	29.52	749.8	29.60	751.9	53.2	11.8	91	W			7		8			0.240	6.1		Prof. E. Luther.
Köslin			29.67	753.5	49.6	9.8		NW			2		5			0.374	9.5		H. Müller.
Leipsic, Observatory	29.53	750.0	29.95	760.7	55.4	13.0	67	NW			3		7	WNW		0.047	1.2		Prof. Bruhns.
Memel, Naval School	29.47	748.5	29.52	749.7	55.0	12.8	77	WNW			4		9s					Squally.	Reinbrecht and Skalweit.
Neufahrwasser	29.65	753.0	29.66	753.4	53.6	12.0	82	WNW			3		9			0.512	13.0		A. Lothes.
Posen	29.46	748.3	29.75	755.6	56.8	13.8	87	W			6		10			0.071	1.8		Dr. Magener.
Strassburg (in Alsace)	29.58	751.2	30.12	765.0	62.2	16.8	65	SW			2		10	SW		0	0		Astronomical Observatory.
Stuttgart	29.06	738.2	29.99	761.8	60.4	15.8	56	SW			1		9	W		0.244	6.2		Prof. Schoder.
Treves, (Trier)	29.50	749.2	30.02	762.5	61.3	16.3	61	SW			6		10			0.819	20.80		Prof. Flesch.
Weissenburg, (Bavaria)	28.56	725.4	30.06	763.4	56.7	13.7	61	WNW	8.5	3.8			6ck		WNW	0.016	0.4		Dr. Von Bebber.
Wustrow, Naval School	29.79	756.6	29 81	757.2	52.2	11.2	63	WNW			5		5ks			0.067	1.7		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.67	753.6	30.05	763.2	77.5	25.3		NE			1.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.25	742.9	29.72	754.8	90.7	32.6	45	Calm					1	SW		0	0	Misty	
Bombay	29.66	753.2	29.69	754.2	85.7	29.8	75	W	6	2.7			10	SE	S	0.75	19.0	Overcast	
Poona	27.76	705.1	29.76	755.8	78.1	25.6	87	ESE					10		ESE	0.76	19.3	D. clouds	
Lahore	28.91	734.2	29.63	752.6	90.6	32.6	48	Calm	0.4	0.2						0	0	Blue sky	
Belgaum	27.22	691.2	29.74	755.4	76.7	24.8	88	SE	4	1.8			10		SE			Thunder-storm	
Roorkee	28.76	730.5	29.24	742.9	86.8	30.4	70	Calm	3	1.3						0	0		
Agra	29.12	739.6	29.67	753.5	92.6	33.7	40	W								0	0		
Nagpur	28.66	728.1	29.69	754.2	85.6	29.8	65	Calm	2.6	1.2			5		S			Thunder-storm	
Lucknow	29.31	744.5	29.68	753.7	88.7	31.5	56	Calm	0.4	0.2						0	0	Blue sky	
Allahabad	29.36	745.8	29.67	753.6	83.7	28.7	86	Calm	0.2	0.1			6	E		0	0	D. clouds	
Patna	29.51	749.6	29.69	754.1	86.4	30.2	81	E	0.2	0.1			10		E	0	0	Overcast	
Hazaribagh	27.70	703.7	29.69	754.2	82.3	27.9	74	NNE	4.1	1.8			2			0	0		
Cuttack	29.68	754.0	29.77	756.0	86.1	30.1	76	S	0.6	0.3			3			0.01	0.3	D. clouds	
Calcutta (Alipore)	29.71	754.5	29.73	755.1	80.2	26.8	92	E	3	1.3			1			0	0	D. clouds	
Goalpara	29.30	744.2	29.68	754.0	84.4	29.1	74	Calm	1.5	0.7			7			0	0	D; clouds	
Goalpara	29.63	752.6	29.72	754.9	82.9	28.3	91	W	1.3	0.6			3			0	0	Misty	
Chittagong	29.39	746.5	29.72	754.9	85.2	29.6	77	Calm	0.4	0.2			8	W	W	0	0	D. clouds	
Sibsagar	28.39	721.0	29.76	755.9	75.8	24.3	88	E	2.4	1.1			10			0.08	2.0	Drizzling	
Jubbulpore																			

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.62	752.3	30.02	762.6	69.4	20.8	69	SW	2.5	1.1	.....	.....	7	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.90	759.4	30.01	762.2	71.8	22.1	56	W	3.8	1.7	.....	.....	6	W	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.82	757.3	30.00	762.1	77.0	25.0	70	N	0	0	.....	.....	8	W	.....	0	0	.....	Cont' Alm. Da Schio.
Bergamo	28.46	722.9	30.00	762.1	70.2	21.2	72	WSW	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.50	749.4	30.01	762.3	68.5	20.3	62	N	.....	.....	2	.....	6	SE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.10	739.0	30.00	761.9	69.6	20.9	65	SE	3.1	1.4	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.12	714.2	30.01	762.2	64.4	18.0	76	WSW	.....	.....	4	.....	8	SE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.79	756.6	30.01	762.2	71.4	21.9	73	SW	.....	.....	2	.....	8	SSW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.83	758.3	30.02	762.5	70.7	21.5	62	SW	4.3	1.9	.....	.....	10	SW	.....	0.157	4.0	.....	Prof. G. M. Garibaldi.
Parma	29.69	754.1	30.00	762.0	73.0	22.8	54	E	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.78	756.3	30.03	762.8	77.0	25.0	54	SW	.....	.....	2	.....	7	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.92	760.0	30.00	762.1	74.3	23.5	70	SW	2.5	1.1	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.53	724.7	30.07	763.8	68.2	20.1	64	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.90	759.4	30.07	763.8	75.9	24.4	65	SW	7.4	3.3	.....	.....	3	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.90	759.4	30.10	764.5	77.0	25.0	57	SW	.....	.....	2	.....	3	WNW	.....	0.059	1.5	.....	Prof. L. Palmieri.
Lecce	29.83	757.6	30.08	764.0	73.8	23.2	50	ENE	2.5	1.1	.....	.....	4	NE	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.85	758.1	30.04	763.0	75.7	24.3	78	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.21	742.0	30.09	764.2	76.3	24.6	71	SW	0	0	.....	.....	1	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.87	758.6	30.11	764.9	72.5	22.5	64	ENE	3.1	1.4	.....	.....	0	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.04	763.0	30.11	764.9	73.9	23.3	84	SE	4.9	2.2	.....	.....	2	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.: Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.89	759.2	30.09	764.3	67.7	19.8	90	SW	0.1	0.05	.....	.....	0	.....	.....	0	0	Very clear.	
Tokei (Yeddo) Observatory	30.14	765.5	30.21	767.3	62.7	17.1	92	NNE	4.0	1.8	.....	.....	1c;s	.....	.....	0	0	Fair	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	62.6	17	57	NW	.....	.....	2	3cs	0	.....	.....	0	0	Clear.	P. Ceballos.
Guadalajara	25.04	636.0	30.00	762.0	58.1	14.5	73	S	.....	.....	1	4	.....	S	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.40	619.8	29.95	760.8	60.3	15.7	85	NW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.09	586.6	30.15	765.9	50.7	10.4	68	Calm	0	0	.....	0	0	.....	.....	0	0	Blue sky	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.2	15.1	82	W	.....	.....	1	1c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.83	757.6	29.84	757.9	77.5	25.3	93	S	.....	.....	2	0	10	.....	SSW	0	0	Foggy	M. M. Cházaro.
San Luis Potosi	24.16	613.9	30.10	764.5	58.0	14.4	44	ENE	.....	.....	.....	.....	10	.....	ENE	0	0	Foggy	G. Barroeta, M. D.
Vera-Cruz	29.89	759.2	29.92	759.9	78.8	26.0	84	NW	.....	.....	.....	1c	1k	.....	.....	0	0	Clear	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.26	591.0	30.03	762.8	46.4	8.0	88	N	0.4	0.2	.....	0	0	.....	.....	0	0	Clear	Prof. P. Spina.
Durango	24.19	614.3	29.97	761.2	65	18.3	85	Calm	.....	.....	0	2cs	0	.....	.....	0	0	Blue sky	M. V. de Leon, C. E.
Colima	28.34	719.8	29.95	760.7	80.6	27.0	85	E	0.9	0.4	.....	0	2	.....	W	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,266.8 m., or 7,438.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 607.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.06	763.5	30.06	763.5	58.3	14.6	.....	NW	.....	.....	2	.....	.....	.....	.....	0.138	3.5	.....	
Groningen	29.93	760.2	29.98	761.6	51.4	10.8	.....	NW	.....	.....	2	.....	.....	.....	.....	0.378	9.6	.....	
Helder	29.99	761.8	29.99	761.8	54.7	12.6	.....	WNW	.....	.....	4	.....	.....	.....	.....	0.051	1.3	.....	
Hellevoetsluis	30.03	762.8	30.03	762.8	57.6	14.2	69	N	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.95	760.6	29.99	761.8	58.8	14.9	61	WNW	.....	.....	2	.....	8	.....	.....	0.657	16.7	Very cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.69	754.0	29.74	755.4	48.2	9.0	68	NNW	12.8	5.7	.....	.....	3	.....	.....	0.142	3.6	.....	
Brônø	29.45	748.0	29.49	749.0	45.7	7.6	74	NNW	18	8	.....	.....	7	.....	.....	0.197	5.0	Light rain...	
Christiania	29.45	748.1	29.60	751.8	50.5	10.3	52	N	7	3	.....	.....	5	.....	.....	0	0	.....	
Tromsô	29.29	744.0	29.34	745.1	42.1	5.6	73	NE	11	5	.....	.....	10	.....	.....	0.331	8.4	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.91	759.6	30.10	764.4	71.2	21.8	86	SW	4.9	2.2	.....	.....	7	.....	.....	0.354	9.0	.....	Dr. J. A. Sampaio.
Campo Major	29.78	756.5	30.06	763.5	81.5	27.5	37	E	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	762.9	30.12	765.1	74.8	23.8	62	SW	4.3	1.9	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	754.8	30.07	763.7	75.0	23.9	50	S	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.03	764.1	30.15	765.9	76.6	24.8	72	SSW	12.5	5.6	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 11° 46′, E. 12° 32′	.....	.....	30.00	762.0	73.8	23.2	.....	NW	.....	.....	3	.....	10	.....	NW	2	SW	Blue sky	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	29.92	760.0	80.6	27.0	.....	NE	.....	.....	4	.....	5	.....	.....	3	NE	D. Clouds ...	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.98	761.5	30.08	764.1	75.9	24.4	59	S	2.9	1.28	.....	.....	1k	.....	.....	0.540	13.73	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.13	765.3	30.19	766.7	73.2	22.9	68	NW	1.3	0.57	.....	3	5	W	.....	0	0	Almost cov.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.21	691.0	.....	.....	65.5	18.6	68	NE	6.4	2.87	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.89	708.4	30.01	762.3	80.6	27.0	44	SE	3.7	1.67	.....	0	1	.....	.....	0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	29.97	761.3	30.12	765.1	70.7	21.5	81	NE	2.4	1.08	.....	5	5	WNW	.....	1.162	29.26	Hazy.....	Olmyo Diaz, Director.
Santiago, Met. Obs'y.	29.20	741.6	30.07	763.8	70.5	21.4	65	NE	10.6	4.72	.....	.....	2	.....	.....	0	0	Almost clear.	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.81	757.2	29.88	758.8	78.9	26.1	88	Calm	0	0	.....	0	1ks	.....	.....	0.441	11.2	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.98	761 4	30.07	763.8	73.4	23.0	69	WSW	11.5	5.1	.....	0	1	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.78	756.5	29.87	758.8	83.5	28.6	81	SW	2.2	1.00	.....	4s	1k	S	S	0	0	Clear.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.26	743.3	29.30	744.3	36.3	2.4	.....	SW	.....	.....	2	.....	10	.....	.....	0.276	7.0	Raining.....	
Umea	29.32	744.8	29.37	745.9	41.7	5.4	91	NW	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	
Hernosand	29.35	745.5	29.40	746.8	42.8	6.0	74	W	.....	.....	2	.....	7	.....	.....	0	0	.....	
Stockholm	29.35	745.5	29.53	750.0	40.6	4.8	84	W	.....	.....	2	.....	10	.....	.....	0.075	1.9	.....	
Wisby	29.41	746.9	29.47	748.4	47.5	8.6	92	NW	.....	.....	7	.....	10	.....	.....	0.134	3.4	Raining.....	
Sub-Series.																			
Upsala	29.43	747.4	29.50	749.3	46.4	8.0	70	WSW	.....	.....	.....	.....	3	SSW	S	0.002	0.06	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.67	728.2	30.06	763.4	68.7	20.4	48	SSW	.....	.....	3	.....	1	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.51	724.1	30.13	765.2	59.7	15.4	66	W	.....	.....	1	.....	9	.....	.....	0.029	1.0	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.7 mm.; Thermometer, +4.9 cent.; Relative Humidity, —25 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.09	764.2	68.4	20.2	55	ENE	10	4.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.2	72.0	22.2	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.90	759.4	82.0	27.8	47	E	.....	.....	1	.....	3c	.....	.....	0.07	1.8	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.75	755.6	30.05	763.3	64	17.8	.....	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	W. R. Bigg.
*Chatham, N B	30.08	764.0	30.14	765.5	43	6.1	94	Calm	0	0	.....	8ck	2ks	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.13	765.3	30.17	766.3	53	11.7	88	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.02	762.5	57.0	13.9	90	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	29.90	759.4	30.05	763.3	48	8.9	94	S	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.60	751.8	29.65	753.1	52.3	11.3	100	SW	.....	.....	.....	8k	0	.....	.....	0.34	8.6	Fair	W. H. Bevis.
*Father Point, Quebec	29.92	760.0	29.95	760.7	52	11.1	73	SW	23	10.3	.....	8k	8s	W	W	0	0	Threatening	J. McWilliams.
Fredericton, N. B	30.13	765.3	30.19	766.8	42.9	6.1	93	SE	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy.....	Prof. Harrison.
*Fort Garry Manitoba	28.55	725.2	29.35	745.5	52	11.1	100	N	10	4.5	.....	8k	8n	N	N	0.110	2.79	Heavy rain..	James Stewart.
Granton, Ontario	28.89	733.8	29.97	761.2	61	16.1	100	SE	.....	.....	2	0	0	.....	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	30.04	763.0	30.18	766.6	48	8.9	97	W	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	F. Allison, M. A.
Hamilton, Ontario	29.66	753.4	30.02	762.5	63.7	17.6	82	SW	.....	.....	3	0	0	.....	.....	0	0	Clear.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.00	762.0	30.02	762.5	45	7.2	80	N	.....	.....	5	.....	10	.....	.....	0	0	Overcast....	E. Weedon.
*Kingston, Ontario	29.74	755.4	30.07	763.8	60	15.6	88	S	11	4.9	.....	2k	0	SW	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.14	765.5	30.18	766.6	54.0	12.2	88	SW	6	2.7	.....	7ck	0	SW	.....	0	0	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.86	758.4	30.06	763.5	57	13.9	84	S	10	4.5	.....	5cs	0	Calm	.....	0	0	Fair.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.24	742.7	29.91	759.7	63	17.2	89	S	9	4.0	.....	0	0	.....	.....	0.15	3.8	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.28	743.7	30.02	762.5	60.5	15.8	94	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.36	745.7	30.03	762.7	61	16.1	95	S	5	2.2	.....	2k	0	SW	.....	0	0	Fair...	H. Morgan.
Port Hastings, N. S	30.12	765.0	30.17	766.3	54.7	12.6	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine....	Peter Grant.
Port Stanley, Ontario	29.38	746.2	30.00	762.0	64	17.8	91	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	M. Payne.
*Quebec, Quebec	29.77	756.1	30.09	764.3	52	11.1	86	W	.....	.....	1	2c	2s	.....	.....	0	0	Fair.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.48	748.8	29.93	760.2	57	13.9	94	E	4	1.8	.....	0	Fog	.....	E	0	0	Fair.....	W. H. McIntyre.
St. Andrews, N. B	30.13	765.3	30.18	766.6	50	10.0	99	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy.....	Dr. Gove.
St. John, N. B	30.03	762.7	30.10	766.8	51	10.6	100	S	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.20	741.7	29.89	759.2	67	19.4	81	S	21	9.4	.....	2cs	0	S	.....	0	0	Clear.....	K. Stewart.
Stayner, Ontario	29.17	740.9	29 92	760.0	66	18.9	86	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	R. J. Cole.
Stratford, Ontario	28 72	729.5	29.97	761.2	60.5	15.8	95	SW	7	3.1	.....	0	2s	.....	.....	0	0	Fair.....	C. J. MacGregor, M. A
*Sydney, C. B	30.17	766.3	30.20	767.1	51	10.6	82	SW	1	0.4	.....	2c	0	.....	.....	0	0	Clear.....	T. C. Hill.
*Toronto, Ontario	29.65	753.1	30.03	762.7	58	14.4	99	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	46.0	7.8	84	NW	.....	.....	.....	4k	4s	.....	.....	0.01	0.3	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.16	766.1	55	12.8	87	S	3	1.3	.....	0	Haze	.....	.....	0	0	Clear	
Alpena, Michigan	29.16	740.7	29.78	756.4	67	19.4	64	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.15	765.8	30.17	766.3	58	14.4	87	N	8	3.6	.....	5k	0	.....	.....	0	0	Fair	
Augusta, Georgia	29.97	761.2	30.15	765.8	63	17.2	89	NE	4	1.8	.....	Haze	0	N	.....	0	0	Clear	
Baltimore, Maryland	30.14	765.5	30.19	766.8	57	13.9	87	NE	3	1.3	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.17	766.3	30.19	766.8	61	16.1	88	N	8	3.6	.....	5k	0	E	.....	0	0	Fair	
Bismarck, Dakota	27.81	706.4	29.67	753.6	48	8.9	100	NW	8	3.6	.....	.....	10n	.....	NW	0.38	9.7	Light rain	
Boerne, Texas	27.35	720.1	.....	.....	74	23.3	81	SE	5	2.2	.....	5k	0	SE	.....	0	0	Fair	
Boise City, Idaho	27.17	690.1	30.13	765.3	51	10.6	65	N	4	1.8	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Boston, Massachusetts	30.05	763.3	30.20	767.1	63	17.2	67	W	3	1.3	.....	2c	Haze	Calm	SW	0	0	Hazy	
Brackettville, Texas	28.71	729.2	29.70	754.4	74	23.3	86	E	2	0.9	.....	10ck	0	E	.....	0	0	Cloudy	
Breckenridge, Minnesota	28.41	721.6	29.35	745.5	54	12.2	100	NW	11	4.9	.....	.....	10s	.....	NW	0.79	20.1	Cloudy	
Brownsville, Texas	29.80	756.9	29.86	758.4	78	25.6	86	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.34	745.2	30.02	762.5	63	17.2	77	S	8	3.6	.....	2k	0	SW	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.90	759.4	30.16	766.1	58	14.4	82	S	8	3.6	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cairo, Illinois	29.50	749.3	29.87	758.7	70	21.1	80	S	14	6.3	.....	0	1s	.....	S	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	46	7.8	69	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	57	13.9	36	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.68	677.7	30.17	766.3	46	7.8	54	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.36	694.9	29.93	760.2	34	1.1	79	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.04	763.0	30.04	763.0	71	21.7	95	NE	16	7.2	.....	.....	10s	.....	NE	0.03	0.8	Cloudy	
Cape Henry, Virginia	30.08	764.0	30.11	764.8	67	19.4	84	NE	18	8.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Lookout, N. Carolina	29.03	762.7	30.04	763.0	69	20.6	95	NE	24	10.7	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape May, New Jersey	30.15	765.8	30.18	766.6	61	16.1	76	NE	10	4.5	.....	5cs	0	SW	.....	0	0	Fair	
Castroville, Texas	29.08	738.6	29.75	755.6	75	23.9	90	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Charleston, South Carolina	30.07	763.8	30.13	765.3	65	18.3	89	NE	11	4.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Cheyenne, Wyoming	23.93	607.8	29 87	758.7	39	3.9	38	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.04	737.6	29.69	754.1	69	20.6	80	SW	12	5.4	.....	5k	0	SW	.....	0	0	Fair	
Cincinnati, Ohio	29.39	746.5	30.03	762.7	66	18.9	81	SE	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Cleveland, Ohio	29.29	744.0	30.00	762.0	63	17.2	78	SE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.06	712.7	29.65	753.1	69	20.6	90	SW	4	1.8	.....	0	5s	.....	SW	0	0	Fair	
Columbus, Ohio	29.18	741.2	30.00	762.0	63	17.2	83	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Concho, Texas	27.92	709.2	29.51	749.5	69	20.6	95	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.40	746.7	29.84	757.9	75	23.9	90	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	28.98	736.1	29.58	751.3	71	21.7	80	S	16	7.2	.....	4k	7ks	SW	SW	0	0	Cloudy	
Decatur, Texas	28.77	730.7	29.89	759.2	73	22.8	85	SW	16	7.2	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	29.02	737.1	29.78	756.4	74	23.3	86	S	11	4.9	.....	2k	0	S	.....	0	0	Fair	
Denver, Colorado	24.70	627.4	29.92	760.0	42	5.6	34	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	28.59	726.2	29.41	747.0	66	18.9	84	SW	8	3.6	.....	.....	10ks	.....	W	0.23	5.8	Cloudy	
Detroit, Michigan	29.26	743.2	29.90	759.4	65	18.3	84	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.27	692.6	29.50	749.3	54	12.2	43	N	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	28.86	733.0	29.51	749.5	71	21.7	85	SW	10	4.5	.....	5k	2n	Calm	SW	0.02	0.5	Light rain	
Duluth, Minnesota	28.66	728.0	29.30	744.2	57	13.9	94	Calm	0	0	.....	.....	10n	.....	Calm	0.25	6.3	Light rain	
Eagle Pass, Texas	29.11	739.4	29.82	757.4	71	21.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.12	765.0	30 18	766.6	56	13.3	81	S	2	0.9	.....	.....	Fog	.....	Calm	Inap	Inap.	Foggy	
Edinburg, Texas	.....	.....	.....	.....	73	22.8	86	S	.....	.....	1	0	5ks	.....	S	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	69	20.6	42	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.32	744.7	30.02	762.5	62	16.7	77	S	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	28.93	734.8	29.55	750.6	60	15.6	94	S	22	9.8	.....	.....	10s	.....	S	0	0	Cloudy	
Florence, Arizona	28.44	722 4	30.04	763.0	60	15.6	44	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.62	648.2	29.59	751.6	52	11.1	40	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.18	639.6	30.14	765.5	60	15.6	26	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.23	742.4	29.73	755.1	75	23.9	81	S	16	7.2	.....	2k	5s	SW	S	0	0	Threatening	
Fort Griffin, Texas	28.55	725.2	29.76	755.9	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.66	702.6	29.50	749.3	71	21.7	85	W	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.58	725.9	29.63	752 6	70	21.1	52	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.13	714.5	29.62	752.3	73	22.8	85	Calm	.....	.....	0	0	8ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.88	758.9	29.92	760.0	79	26.1	82	SE	8	3.6	.....	5ck	0	SE	.....	0.02	0.5	Fair	
Graham, Texas	28.73	729.7	29.72	754.9	76	24.4	77	Calm	0	0	.....	0	2ks	.....	SW	0	0	Fair	
Grand Haven, Michigan	29.11	739.4	29.71	754.6	72	22.2	71	SW	28	12.5	.....	5k	0	SW	.....	0	0	Fair	
Indianapolis, Indiana	29.16	740.7	29.90	759.4	67	19.4	79	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	29.86	758.4	29.89	759.2	78	25.6	86	S	7	3.1	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.67	728.2	29.74	755.4	76	24.4	73	SW	10	4.5	.....	2ck	0	S	.....	0	0	Clear	
Jacksonville, Florida	30.01	762.2	30.03	762.7	71	21.7	85	N	7	3.1	.....	0	0	.....	.....	0.77	19.6	Clear	
Keokuk, Iowa	28.93	734.8	29.50	749.3	74	23.3	76	S	22	9.8	.....	0	5s	.....	S	0	0	Fair	
Key West, Florida	29.87	758.7	29.90	759.4	81	27.2	78	NE	15	6.7	.....	1cs	1ks	Calm	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.04	763.0	30.06	763.5	71	21.7	95	NE	26	11.6	.....	5ck	2s	NE	NE	0.07	1.8	Fair	
Knoxville, Tennessee	29.15	740.4	30.14	765.5	60	15.6	88	Calm	0	0	.....	0	6s; fg	.....	Calm	0	0	Fair	
La Crosse, Wisconsin	28.78	731.0	29.47	748.5	65	18.3	89	W	3	1.3	.....	.....	10s	.....	W	0.12	3.0	Cloudy	
La Mesilla, New Mexico	26.08	661.9	30.21	767.3	48	8.9	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.40	746.7	29.72	754.9	77	25.0	82	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.60	624.8	29.87	758.7	38	3.3	72	NW	6	2.7	.....	0	0	.....	.....	0.08	2.0	Clear	
Leavenworth, Kansas	28.68	728.5	29.46	748.3	73	22.8	81	S	18	8.0	.....	5k	0	SW	.....	0	0	Fair	
Los Angeles, California	29.59	751.6	29.93	760.2	54	12.2	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.44	747.8	29.98	761.5	68	20.0	70	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Lynchburg, Virginia	29.52	749.6	30.18	766.6	66	18.9	73	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.62	726.9	29.53	750.0	69	20.6	90	SW	22	9.8	.....	.....	10s	.....	SW	0	0	Cloudy	
Marquette, Michigan	28.82	732.0	29.48	748.8	65	18.3	84	SE	9	4.0	.....	10k	0	S	.....	Inap.	Inap.	Cloudy	
Mason, Texas	28.24	717.3	29.91	759.7	74	23.3	81	SE	8	3.6	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.06	733.4	29.97	761.2	70	21.1	75	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	28.94	735.1	29.62	752.3	68	20.0	90	S	15	6.7	.....	.....	10s	.....	S	0	0	Cloudy	
Mobile, Alabama	29.99	761.7	30.01	763.0	74	23.3	78	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.86	758.4	30.09	764.3	67	19.4	79	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.06	738.1	30.10	764.5	57	13.9	81	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Mt. Washington, N. H.	24.00	609.6	30.36	771.1	47	8.3	46	NW	14	6.3	.....	0	2s	.....	NW	0	0	Clear	
Nashville, Tennessee	29.51	749.5	30.03	762 7	69	20.6	75	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New Haven, Connecticut	30.10	764.5	30.32	767.8	58	14.4	91	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.17	766.3	30.32	767.8	54	12.2	87	NE	4	1.8	.....	0	Fog	.....	N	0	0	Clear	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	78	25.6	78	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	30.16	766.1	30.30	767.1	60	15.6	88	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New York, New York	30.04	763.0	30.21	767.3	60	15.6	88	N	2	0.9	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.08	764.0	30.14	765.5	68	20.0	84	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
North Platte, Nebraska	26.90	683.2	29.46	748.3	42	5.6	91	W	16	7.2	.....	0	0	.....	.....	0.03	0.8	Clear	
Olympia, Washington Ter.	29.79	756.7	29.83	757.7	54	12.2	74	SW	16	7.2	.....	0	5s	.....	SW	0.83	21.1	Fair	
Omaha, Nebraska	28.43	722.1	29.45	748.0	59	15.0	88	NW	12	5.4	.....	0	5s	.....	NW	0.14	3.6	Fair	
Oswego, New York	29.78	756.4	30.10	764.5	60	15.6	82	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Pembina, Dakota	28.51	724.1	29.32	744.7	50	10.0	100	NW	24	10.7	.....	.....	10n	.....	Calm	1.64	41.7	Heavy rain	
Philadelphia, Pa	30.17	766.3	30.22	767.6	60	15.6	77	N	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.78	731.0	.....	.....	59	15.0	48	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.60	447.0	29.81	757.2	9	—12.8	57	SW	60	26.8	.....	0	0	.....	.....	0.06	1.5	Clear	
Pioche, Nevada	24.08	611.6	29.84	757.9	45	7.2	46	SW	4	1.8	.....	0	0	.....	.....	0.03	0.8	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.09	764.3	55	12.8	93	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.26	743.2	29.89	759.2	67	19.4	79	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.12	765.0	30.17	766.3	54	12.2	74	SW	3	1.3	.....	1ck	Fog	Calm	.....	0	0	Clear	
Portland, Oregon	29.96	761.0	30.00	763.5	54	12.2	87	SW	5	2.2	.....	0	8n	.....	SW	0.45	11.4	Light rain	
Prescott, Arizona	24.78	629.4	30.14	765.5	39	3.9	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.06	738.1	29.85	758.2	74	23.3	85	SE	10	4.5	.....	8k	0	S	.....	0	0	Cloudy	
Punta Rassa, Florida	29.94	760.5	29.96	761.0	77	25.0	82	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.74	755.4	30.10	764.5	55	12.8	87	NW	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.93	760.7	77	25.0	82	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.44	747.8	30.04	763.0	62	16.7	77	SW	12	5.4	.....	1k	0	Calm	.....	0	0	Clear	
Roseburg, Oregon	29.63	752.6	30.20	767.1	50.5	10.8	90	Calm	0	0	.....	0	8s	.....	Calm	0.14	3.6	Cloudy	
Sacramento, California	29.98	761.5	30.07	763.8	52	11.1	93	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.21	741.9	29.75	755.6	72	22.2	76	S	24	10.7	.....	1k	2s	S	Calm	0	0	Fair	
St. Marks, Florida	30.02	762.5	30.04	763.0	71	21.7	80	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.50	723.9	29.27	743.4	62	16.7	88	S	10	4.5	.....	.....	10s	.....	SW	0.62	15.7	Cloudy	
Salt Lake City, Utah	25.66	651.8	30.00	762.0	47.5	8.6	67	E	4	1.8	.....	.....	10s	.....	Calm	0.57	14.5	Cloudy	
San Antonio, Texas	29.17	740.9	29.72	754.9	78	25.6	82	SW	3	1.3	.....	.....	10s	.....	SE	0	0	Cloudy	
San Diego, California	29.89	759.2	29.96	761.0	59	15.0	76	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.31	744.5	29.96	761.0	65	18.3	84	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.17	766.3	30.20	767.1	63	17.2	72	E	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	30.02	762.5	30.08	764.0	56	13.3	81	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.25	590.5	29.79	756.7	48	8.9	16	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.02	762.5	30.11	764.8	65	18.3	89	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.70	754.4	29.91	759.7	73	22.8	90	SE	5	2.2	.....	.....	10s	.....	S	0	0	Cloudy	
Silver City, New Mexico	24.28	616.7	.....	.....	55	12.8	43	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.06	763.5	30.09	764.3	66	18.9	89	N	12	5.4	.....	.....	10s	.....	N	0	0	Cloudy	
Springfield, Massachusetts	30.07	763.8	30.20	767.1	55	12.8	93	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Stockton, Texas	29.90	683.2	29.90	759.4	60	15.6	49	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.15	765.8	30.20	767.1	59	15.0	88	SW	6	2.7	.....	1c	0	Calm	.....	0	0	Clear	
Toledo, Ohio	29.25	742.9	29.90	759.4	68	20.0	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	67	19.4	38	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.07	763.8	30.10	764.5	67	19.4	89	NE	17	7.6	.....	0	5s	.....	NE	0	0	Fair	
Umatilla, Oregon	29.50	749.3	.....	.....	56	13.3	87	SW	28	12.5	.....	0	0	.....	.....	0.10	2.5	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	SW	.....	.....	1	.....	10n	.....	SW	0.15	3.8	Raining	
Uvalde, Texas	28.95	735.3	29.74	755.4	75	23.9	81	SE	3	1.3	.....	0	5s	.....	S	0	0	Fair	
Vicksburg, Mississippi	29.76	755.9	30.01	762.2	68	20.0	90	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.03	610.4	29.51	749.5	43	6.1	69	W	12	5.4	.....	.....	10s	.....	W	0.10	2.5	Cloudy	
Visalia, California	29.71	754.6	30.08	764.0	51	10.6	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.10	764.5	30.22	767.6	56	13.3	94	Calm	0	0	.....	0	Fog	.....	N	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	63	11.7	42	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.01	762.2	30.08	764.0	65	18.3	89	N	9	4.0	.....	.....	10s	.....	N	0	0	Cloudy	
Winnemucca, Nevada	25.72	653.3	30.08	764.0	40	4.4	73	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.16	766.1	30.22	767.6	63	17.2	78	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.29	718.6	29.52	749.8	54	12.2	86	W	12	5.4	.....	1c	2s	W	W	0.12	3.0	Fair	
Yuma, Arizona	29.70	754.4	29.87	758.7	60	15.6	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.53	750.0	29.58	751.3	30.5	— 0.8	100	N	9	4.0	.....	.....	10n	.....	N	0.10	2.5	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.86	758.4	29.88	758.9	82	27.8	83	SE	1.2	0.5	.....	4cs	0	W	.....	0.35	8.9	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.82	757.4	29.84	757.9	81	27.2	87	Calm	0	0	.....	4c	8k	.....	S	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	85	29.4	87	SE	2	0.9	.....	2c	5ks	E	.....	0.28	7.1	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	82	27.8	91	Calm	0	0	.....	8c	2ks	Calm	SW	0	0	.....	James Gall.
Navassa, W. I.	29.80	756.9	29.88	758.9	84	28.9	.....	S	9.2	4.1	.....	.....	.....	.....	.....	0.50	12.7	Showery	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.98	761.5	29.99	761.7	83	28.3	79	SE	.....	.....	3	5k	7ks	L	.....	0.440	11.18	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	67.2	19.6	83	Calm	0	0	.....	2cs	3ks	.....	.....	0.08	2.0	.....	Thomas Herran

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,393 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,769 (?) ft., or 539.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,370 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,020 (?) ft., or 624.0 (?) m.; Fort Mill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,696 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.04 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.664 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.56 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. CHARACTER.	SEA-SWELL. DIRECTION FROM—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.18	766.6	78	25.6	78	25.6	72	ENE	20	8.9	.....	.....	2	.....	E	0	0	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	30.19‡	766.8‡	.....	.....	56	13.3	87	SW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.14*	765.5*	71	21.7	65	18.3	89	E	.....	.....	2	.....	1ck	.....	ENE	0	0	.....	.....	Fair	
Adams. S. 45° 31′, W. 109° 43′	29.46	748.3	55	12.8	50	10.0	93	N	.....	.....	5–6	.....	10	.....	N	Blank	Blank	Rough	N	Cloudy	
Alaska, S. 33° 02′, W. 71° 46′	30.18	766.6	62	16.7	56	13.3	87	SSE	.....	.....	5	.....	2	.....	SE	0	0	Smooth	.....	Hazy	
Alliance, Messina, Sicily	30.10‡	764.5‡	.....	.....	75	23.9	68	ENE	.....	.....	2	.....	1	.....	Calm	.....	.....	.....	.....	Clear	
Ashuelot, Yokohama, Japan	30.22	767.6	72	22.2	71	21.7	90	N	.....	.....	2	.....	2	.....	N	.....	.....	Mod'ate	E	Clear	
Canonicus, New Orleans, La.	30.00	762.0	54	12.2	76	24.4	91	SE	.....	.....	2	.....	4	.....	.....	.....	.....	.....	.....	Cloudy?	
Colorado, New York, N. Y.	30.21‡	767.3‡	.....	.....	63	17.2	83	ENE	6	2.7	.....	.....	2	.....	NE	0	0	.....	.....	Foggy	
Constitution, Havre, France	.....	.....	.....	.....	62	16.7	88	WNW	.....	.....	2	.....	9	.....	Calm	.....	.....	.....	.....	Cloudy	
Despatch, Volo, Turkey	30.10‡	764.5‡	.....	.....	77	25.0	60	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, S. 29° 40′, W. 34° 42	30.23	767.8	61	16.1	60	15.6	88	SSE	.....	.....	4	.....	2	.....	SSE	.....	.....	Mod'ate	SE	Clear	
Franklin, Norfolk, Va.	30.22	767.6	70	21.1	68	20.0	97	NNE	6	2.7	.....	.....	10	.....	NNE	0	0	.....	.....	Cloudy	
Gettysburg N. 36° 58′ 20″, E. 3° 50′ 50″	30.03‡	762.7‡	.....	.....	77	25.0	95	E	.....	.....	3	.....	2	.....	Calm	0	0	Smooth	.....	Hazy	
Guard, Off Bahia, Brazil	30.08	764.0	77	25.0	76	24.4	82	SSE	....	.....	5	.....	10	.....	SSE	.....	.....	Mod'ate	S	Rainy	
Hartford, Rio de Janeiro, Brazil	30.00	762.0	.....	.....	69	20.6	75	ENE	6.0	2.7	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Marion, Naples, Italy	30.13	765.3	74	23.3	74	23.3	72	SSW	.....	.....	2	.....	0	.....	.....	0	0	Smooth	.....	Clear	
Michigan, Erie, Pa.	29.95‡	760.7‡	.....	.....	61.5	16.4	80	SSE	.....	.....	6	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy, Yokohama, Japan	30.20‡	767.1‡	.....	.....	68	20.0	79	NNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.	30.29	769.4	81	27.2	75	23.9	77	NNE	22	9.8	.....	.....	2	.....	NNE	0	0	.....	.....	Clear	
Onward, Callao, Peru	30.12†	765.0†	.....	.....	62	16.7	88	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.00	762.0	76	24.4	70	21.1	85	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C.	.....	.....	.....	.....	56	13.3	100	ENE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, Portland, Maine	30.21	767.3	55	12.8	54	12.2	87	SW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Misty	
Powhatan, Portsmouth, N. H.	30.18‡	766.6‡	.....	.....	52	11.1	86	SW	1.8	0.8	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	30.06	763.5	86	30.0	85	29.4	87	E	.....	.....	3	.....	2	.....	E	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.87	758.7	77	25.0	77	25.0	95	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Santee, Annapolis, Md.	30.18‡	766.6‡	.....	.....	63	17.2	89	N	.....	.....	2	.....	5	.....	NE	0	0	.....	.....	Fair	
Saratoga, Philadelphia, Pa.	30.13	765.3	.....	.....	56	13.3	94	N	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Misty	
St. Louis, League Island, Pa	30.10	764.5	60	15.6	58	14.4	94	NE	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Supply, Havre, France	30.08	764.0	64	17.8	63	17.2	78	NNW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Overcast	
Swatara, Boston, Mass.	30.21‡	767.3‡	.....	.....	59	15.0	82	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Trenton, N. 43° 35′, W. 13° 48′	30.21‡	767.3‡	.....	.....	67	19.4	79	NE	.....	.....	1	.....	2	.....	N;E	0	0	Light	NE	Clear	
Tuscarora, Pichilinque, Mexico	29.70	754.4	82	27.8	82	27.8	79	S	.....	.....	2	.....	5	.....	Calm	0	0	Smooth	.....	Fair	
Vandalia, N. 37° 47′, W. 0° 22′	30.13‡	765.3‡	.....	.....	72	22.2	90	E	.....	.....	4	.....	10	.....	E	.....	.....	.....	.....	Raining	
Wabash, Boston, Mass.	.....	.....	.....	.....	54	12.2	??	WSW	1	0.4	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama, N. 47°, W. 124° 50′		29.90*	759.4*				W			5		3		W		Heavy	W	Clear	Capt. Cobb.
S. S. City of Peking																			Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 18° 29′, W. 89° 16′		29.92†	760.0†	78	25.6	??	NE			1		9		Calm	Blank	Easy ground	SE	Misty	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, N. 39° 55′, W. 124° 21′		30.11†	764.8†	52	11.1	100	NNW			1					0	Heavy		Dense fog	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zealandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 48° 03′, W. 165° 14′		29.93*	760.2*	56	13.3	81	ENE			5		n		E		Rough	E	Drizzling	Capt. L. Myer.
S. S. Gaelic																			
S. S. Oceanic, N. 37° 16′, E. 167° 24′		29.87	758.7	71	21.7	90	WSW			4		8		WSW		4	WSW	Raining	Capt. W. H. Kidley. Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 50° 10′, W. 30° 29′		29.70	754.4	62	16.7	72	SSW			5		1		SW	3 hours	4.5	SW; WNW	Fine	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall of melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				48	8.9	100	SE			3		10		SE	Heavy				Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.18	766.6	65	18.3	89	NNE			1		0			0			Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 05′ W. 26° 16′		29.95*	760.7*				SSW	10	4.5			1		S		Mod'ate	SW	Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 17° 30′, W. 64° 18′		29.85	758.2	87	30.6	69	SE	7	3.1			2k		SE	0.31 in or 7.9 mm.	Smooth		Clear	Capt. James Jorgensen.
Schooner Florence																			O. T. Sherman.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 2, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.11	764.8	62.8	17.1	94	N			3		3			0	0	Pretty fair...	Kesxuche.
Algiers			30.04	762.9	70.0	21.0	94	SSE			1		10			0.606	15.4	Covered.	Tourillere.
La Calle			30.11	764.9	78.4	25.8	70	N			1		5			0	0	Cloudy.....	Foufrede.
Tunis			30.08	763.9	81.3	27.4	49	NW			5		5			0	0	Cloudy.	Jacques.
Sfax			30.14	765.5	82.4	28.0	.....	N			5		5			0	0	Cloudy.....	Gau.
Saida			30.04	763.1	71.6	22.0	58	E			3		3			0	0	Pretty fair..	Herbin.
Tebessa			30.03	762.8	77.4	25.2	46	W			3		6			Blank	Blank	Cloudy.....	Watrin.
Geriville			30.02	762.5	76.0	24.8	79	S			3		10			0.276	7.0	Covered	Brugnlaux.
Laghouat			30.12	765.1	74.8	23.8	43	E			1		1			0.157	4.0	Very fair.....	Bertrand.
Biskra			30.08	763.9	89.6	32.0	31	SE			1		2			0	0	Fair.....	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.55	750.6	30.10	764.5	58.5	14.7	76	SW			1		8						Prof. Ivan Storlr.
Cracow, I. R. Observatory	29.38	746.3	30.17	766.3	44.1	6.7	94	WNW			1		10			0.118	3.0	Raining	Dr. Wierzbiski
Eperies	29.05	737.9	29.91	759.8	60.4	15.8	71	S			2		10s		E	0.409	10.4		Julius Mikolik.
Gratz	28 89	733.9	30.15	765.8	55.2	12.9	75	NW			4		7			0	0		Andreas Rospini.
Hermannstadt	28.47	723.1	29.91	759.6	69.4	20.8	53	SW			1		5			0.346	8.80		Prof. A. Gottschling.
Kremsmünster	28.95	735.3	30.31	769.8	51.4	10.8	77	WNW			3		7			0.035	0.9		Prof. C. Wagner
Lemberg	28.98	736.2	29.98	761.4	50.7	10.4	98	NW			1		10			0.386	9.8		Dr. T. Stanecki.
Pola	29.90	759.4	30.01	762.2	72.0	22.2	63	ESE			1		9ns			0.748	19.0		I.R.Hydrographic Office
Szathmar	29.56	750.7	30.02	762.4	57.6	14.2	87	S			1		10			0.319	8.1		Julius Csics, S. J.
Szegedin	29.73	755.1	30.01	762.2	57.2	14.0	94	Calm			0		10			0.244	6.2	Rainy	Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	68.4	20.2	58	E			1		4			0.087	2.20		P. Busin.
Vienna	29.50	749.2	30.23	767.7	50.2	10.1	78	WNW			3		8			0.228	5.8	½ clear.....	I. R. Central Met. Obs'y.
																0.169	4.3		

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	30.15	765.9	30.36	771.1	56.3	13.5	55	ESE			2		2			0	0		Royal Observatory
Furnes	30.36	771.2	30.39	771.8	62.4	16.9	58	S			2		6			0	0	Foggy	M. E. de Cae.
Maeseyck	30.25	768.3	30.38	771.6	58.1	14.5	77	WSW			2		5			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

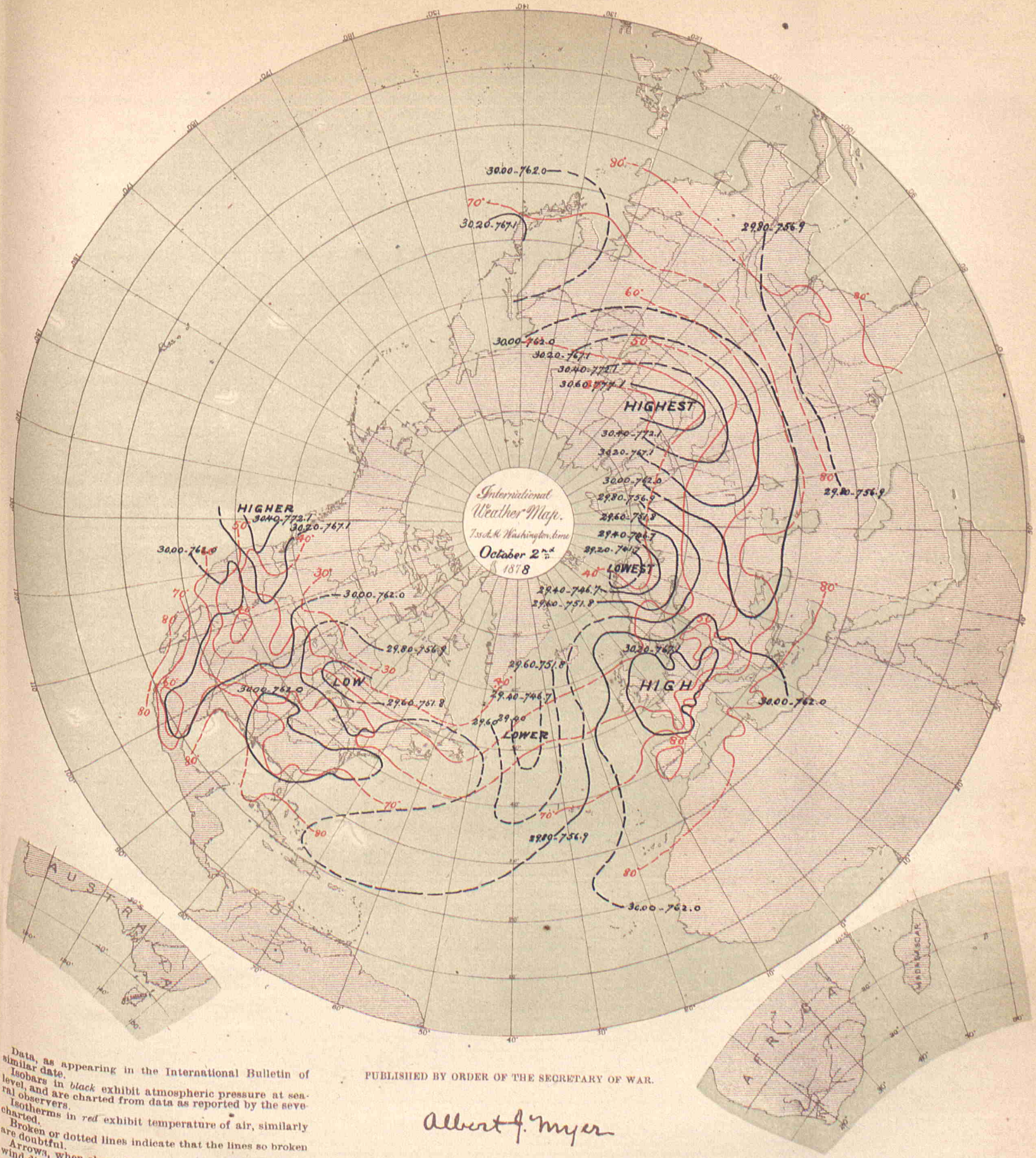
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Low'r. 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.
Aberdeen	30.12	765.0	30.22	767.6	51.2	10.7		S	14	6.3			2			0.070	1.78	Blue sky	W. Boswell.
Ardrossan	30.18	766.6	30.20	767.1	54	12.2		SE			3		5					Misty	George Carrick.
Armagh, Observatory			30.21	767.3	54.0	12.2		S	7	3.1			10					Gloomy	S. Call.
Bidston, (Liverpool Obs.)			30.26	768.6	53.8	12.1		SE	17	7.6			7					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.83	758.9	30.28	769.1	53.1	11.7		NE			1		5			0.21	5.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	83	28.3		NE			1		3					D. clouds	Pvt. G. W. Roberts, A. H. O.
Cambridge, Observatory			30.32	770.1	56.5	13.6		S			1		7					D. clouds	H. Todd.
Cardington			30.06	763.5	54.0	12.2		NW			1		10					Overcast	John McLaren.
Chatham, School M. E.	30.21	767.3	30.34	770.6	58.2	14.6		S			3		8					D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	28.64	727.4	30.11	764.8	56.4	13.6		NE			4		9					Foggy	Alexander Watt.
Donaghadee	30.17	766.3	30.20	767.1	56	13.3		S			3		5					D. clouds	J. Mac Gowan.
Dover	30.30	769.6	30.33	770.4	58	14.4		S			2		5					½ clouded	J. Costello.
Falmouth, Observatory	30.04	763.0	30.27	768.8	59.1	15.1		SSE			1		8					D. clouds	The Staff.
Fort Napier, (Natal)	27.46	697.5	29.78	756.4	95.7	35.4		E			3		0					Blue sky	Pvt. G. Salmon, A.H.O.
Free Town, (Sierra Leone)	29.66	753.4	29.89	759.2	85.5	29.7		SW			1		3					D. clouds	
Galway, Queen's College			30.10	764.5	60	15.6		SSW			2		9					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.99	761.7	30.05	763.3				E			3		2					Blue sky	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	30.00	762.0	30.20	767.1	51.5	10.8		SSW			4		5					D. clouds	D. G. Maclean.
Great Yarmouth	30.32	770.1	30.33	770.4	54	12.2		SSE			2		2					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	30.15	765.8	30.32	770.1	58.2	14.6		SE			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.06	763.5	30.27	768.3	62.2	16.9		SE			2		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.28	769.1	63	17.2		S			2		2ck			0	0	Fine	M. P. Moyle.
Holyhead	30.17	766.3	30.22	767.6	56	13.3		S			3		8					D. clouds	John Tilston.
Jersey																			J. Fisher.
Kew, Observatory	30.28	769.1	30.32	770.1	59.6	15.3		ESE	6	2.7			6					D. clouds	The Staff.
Kingstown	30.21	767.3	30.24	768.1	56	13.3		SSE			3		9					Overcast	George Mitchell.
Leicester, Museum			30.31	769.9	55.5	13.1		W			1		3					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.94	760.5	30.01	762.2	78	25.6		SW			3		4n					D. clouds	Sergt. Beckett.
Nairn	30.06	763.5	30.16	766.1	53	11.7		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			29.84	757.9	81.0	27.2		N			2		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	30.14	766.5	30.35	770.9	58.7	14.8		SSW			3		2c;k		S	0.007	0.18	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.77	756.1	30.30	769.6	55.2	12.9		S			2		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.31	769.9	58	14.4		Calm			0		10					Gloomy	H.E. Bellamy.
Plymouth	30.19	766.8	30.27	768.8	58.5	14.7		SE			3		10					Overcast	John Merrifield.
Roche's Point	30.14	765.5	30.18	766.6	58	14.4		SSE			4		10					Misty	W. Kennedy.
Saint Ann's Head	30.08	764.0	30.25	768.3	59	15.0		SSW			2		4					D. clouds	John O. Walker.
Sandwick Manse, (Orkneys.			30.16	766.1	49.2	9.6		S	10	4.5			10						Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.92	760.0	75.8	24.3		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	30.03	762.7	30.32	770.1	54.9	12.7		ESE			3		3			0.01	0.3	Blue sky	W. F. Cooper.
Silloth, Rectory	30.20	767.1	30.23	767.8	57.4	14.1	66	Calm			0		1			0.090	2.29	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.88	758.9	30.28	769.1	51.8	11.0		S			2		8					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	30.09	764.3	30.31	769.9	58.2	14.6		S			1		4					Blue sky	Rev. C. H. Griffith, F.M.S.
Thurso	30.10	764.5	30.16	766.1	51	10.6		SSE			1		10					Overcast	John Trotter.
Truro, Royal Institution			30.24	768.1	65	18.3		SE			4		6					D. clouds	W. Newcombe.
Valencia, Observatory	30.11	764.8	30.14	765.5	59.3	15.2		SE	20	8.9			10					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.92	760.0	55.0	12.8	77	N			1		2k			0.06	1.5		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.02	762.4	72.2	22.3	60	ESE	17.0	7.6		1	2		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.06	763.5	30.15	765.8	50.6	10.3	85	S	2	0.9			0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides,																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Corrected Inches	Millimeters	Reduced Inches	Millimeters	Fahrenheit	Centigrade	Per cent.	Wind From—	Miles per hour	Meters per second	Force	Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather	Observer
S. S. Algeria																			Capt. W. Watson.
Brig Catherine																			Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle, N. 39° 45', W. 73° 10'			30.04	763.0	80	26.7		Calm			0		5			3	SE	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 19° 30', W. 49° 0'			29.92	760.0	86	30.0					1		5				E	D. clouds	Capt. D. W. A. Qualle
S. S. Peruvian																			Capt. W. H. Smith, R. N. R.
Schooner Traveller, N. 48° 5', W 22° 45'			29.84	757.9	63	17.2		SE			5		10			4	NW; SSW	Misty	Capt. Alex Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.23	666.2	29.96	760.7	66.2	19.0	92	NE	.....	.....	1	9ck	Haze	.....	.....	Inap.	Inap.	.....	Federico Maison
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.02	762.5	30.07	763.7	52.0	11.6	62	NW	.....	.....	4	.....	8	.....	.....	.....	.....	.....	.....
Fanöe	30.16	765.9	30.17	766.4	51.7	12.6	62	NW	.....	.....	6	.....	7	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.06	763.5	30.10	764.4	45.5	7.5	59	SW	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....
Vestervig	30.02	762.4	30.19	766.7	52.2	11.2	75	NW	.....	.....	6	.....	6	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.74	755.5	30.30	769.5	59.0	15	80	NE	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.24	768.0	30.34	770.7	61.9	16.6	64	SE	.....	.....	3	.....	2	.....	N	0.244	6.2	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	29.99	761.8	30.07	763.8	72.0	22.2	42	N	.....	.....	3	.....	0	.....	.....	0	0	Very clear	M. Girard, Director.
Bar-sur-Seine	29.75	755.6	30.30	769 7	60.8	16.0	46	E	.....	.....	2	.....	0	.....	.....	0.008	0.2	Clear	C. Saillard.
Beaumette Obs'y (Anvers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	30.08	763.9	30.36	771.1	58.1	14.5	62	E	.....	.....	1	.....	2	.....	ENE	0.04	1.	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.34	745.1	30.22	767.6	61.5	16.4	63	SE	.....	.....	0	.....	1	.....	E	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	29.30	744.2	30.22	767.6	63.5	17.5	61	N	.....	.....	4	2c	.....	N	.....	0	0	Slightly cl'dy	M. Marlot, Director.
Bourges, Normal School	29.75	755.7	30.32	770.0	59.0	15.0	74	E	.....	.....	1	.....	.....	.....	E	0.04	1.	.....	A. Wagner, Director.
Brest, Naval Observatory	29.97	761.3	30.22	767.5	69.4	20.8	61	SE	.....	.....	1	.....	1	.....	Calm	0.010	0.25	.....	The Staff.
Carcassonne, Normal School	29.76	756.0	30.17	766.2	72.7	22.6	41	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	Septembre, Director.
Caen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Lair, Director.
Chartres, Normal School	29.77	756.1	30.32	770.1	73.0	22.8	79	NNE	.....	.....	2	.....	0	.....	.....	0.08	2.	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	30.04	762.9	30.36	771.1	59.0	15.0	58	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.0	30.19	766.8	66.4	19.1	41	NE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.48	748.7	30.37	771.3	63.6	12	57	E	.....	.....	3	.....	2n	.....	E	0.421	10.7	.....	Dr. Coulet, Director.
Commune de Gréasque*	28.97	735.7	30.11	764.7	73.9	23.3	41	NW	.....	.....	2	.....	2	SW	.....	0	0	¾ covered	V. Kina.
Grenoble, Normal School	29.29	744.0	30.05	763.2	65.1	18.4	75	NW	.....	.....	1	.....	8kn	.....	NW	0	0	Very cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	30.03	762.8	30.34	770.7	56.8	13.8	87	SE	.....	.....	1	.....	2	S	SE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.32	744.8	30.21	767.4	64.4	18	63	NNE	.....	.....	4	.....	2	.....	NE	0.024	0.60	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	30.20	767.1	30.30	769.6	64.8	18.2	65	SSE	.....	.....	3	.....	.....	S	SE	0	0	.....	T. Carré, Director.
Mâcon, Normal School	30.20	767.1	30.23	767.9	65.1	18.4	67	NE	.....	.....	4	.....	5	.....	NE	0	0	Cloudy	M. Galzin, Director.
Mirecourt, Normal School	29.27	743.5	30.32	770.2	54.0	12.2	76	N	.....	.....	1	.....	2ck	.....	N	0.08	2.	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.83	757.6	29.98	761.6	81.0	27.2	47	N	.....	.....	4	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Privas, Normal School	29.12	739.7	30.17	766.3	68.0	20	40	N	.....	.....	4	.....	2	N	N	0	0	Slightly cl'dy	M. Cantier.
Puy de Dome (Summit)	25.84	643.6	.....	.....	42.6	5.9	94	E	.....	.....	2	.....	8	.....	E	0	0	.....	Alluard, Director.
Rochefort, Naval Obs'y	30.24	768.1	30.27	768.9	60.6	15.9	84	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.25	768.3	30.34	770.5	62.2	16 8	61	SE	.....	.....	1	.....	1	.....	SE	0	0	Clear	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.29	769.3	66.2	19.0	56	SSE	.....	.....	2	.....	1	.....	SSE	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	30.17	766.3	30.34	770.5	60.4	15.8	62	E	.....	.....	1	.....	1	.....	E	0	0	.....	E. Renou.
Tarbes, Normal School	29.18	741.1	30.26	768.5	57.2	14	89	SW	.....	.....	3	.....	2	NW	SW	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.64	752.8	30.33	770.4	75.2	24	83	SE	.....	.....	1	.....	2	.....	S	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.74	755.5	29.77	756.2	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.63	16.	.....	L'Abbé Marchési.
Lyons	.....	.....	29.21	767.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.05	763.3	78.0	22.8	40	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	The Staff.
Mont-Louis	25.02	635.6	30.34	770.6	60.8	16.0	44	WSW	.....	.....	3	.....	1	.....	NW	0	0	.....	M. Cave.
Nice	.....	.....	30.01	762.2	70.9	21.6	84	SE	.....	.....	1	.....	5	.....	.....	0	0	Fair	Dr. A. Niepce.
Paris, Montsouris Obs'y	30.05	763.2	30.32	770.2	59.4	15.2	62	E	.....	.....	3	.....	2	.....	E	0.024	0.6	.....	Marié Davy, Director
Perpignan	.....	.....	30.13	765.4	73.4	23.0	47	N	14.9	6.66	.....	.....	0	.....	.....	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.71	576.8	.....	.....	50.9	10.5	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.53	750.0	30.26	768.5	66.0	18.9	53	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	The Staff.
Tours	29.89	759.3	30.09	764.3	59.4	15.2	68	ENE	.....	.....	2	.....	5	.....	E	0.020	0.5	.....	C. Marquet.
Versailles	.....	.....	30.33	770.4	62.6	17.0	43	E	.....	.....	2	.....	4	.....	.....	0.032	0.82	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.01	759.7	29.93	760.3	76.5	24.7	94	SSE	8.7	3.9	.....	.....	0	.....	.....	0	0	Clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.32	744.6	30.16	766.1	53.6	12.0	66	NW			3		8	W		0.146	3.7		Prof. Dr. Hoh.
Berlin	30.04	762.9	30.21	767.3	57.2	14.0	52	NW			4		5			0	0		Prof. Arndt.
Breslau	29.66	753.3	30.19	766.9	54.3	12.4	50	NW			3		6			0.127	3.23		Royal University Obs'y
Carlsruhe	29.92	760.0	30.36	771.1	55.4	13.0	59	NE			1		2			0	0		Albert Senz.
Cassel	29.71	754.7	30.33	770.3	56.5	13.6	62	NNW			4		5	WNW		0	0		Dr. H. Möhl.
Crefeld	30.17	766.3	30.33	770.4	58.8	14.9	55	NW			2		5k			0.12	3.		Director Lose.
Emden	30.07	763.8	30.11	764.7	54.9	12.7	66	NW			3		0			0	0		Prof. Prestel.
Frankfort on the Main	30.00	762.1	30.37	771.4	57.6	14.2		N			1		5			0.146	3.7		Physical Society.
Friedrichshafen	28.88	733.5	30.33	770.3	53.6	12.0	68	ENE			4		8	E		0	0		M. Wilhelm.
Hamburg	30.17	766.2	30.24	768.0	56.7	13.7	63	NW			5		5k	NW		0.094	2.4	Squally.	Captain F. Hegemann.
Kiel	30.19	766.7	30.21	767.2	55.2	12.9	56	NW			4		6			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.93	760.2	30.01	762.3	57.4	14.1	62	NW			8		4			0.154	3.9		Prof. E. Luther.
Köslin			30.08	764.1	50.5	10.3		NW			2		1			0.457	11.6		H. Müller.
Leipsic, Observatory	29.86	758.5	30.29	769.3	56.1	13.4	55	NW			3		8	NW		0.209	5.3		Prof. Bruhns.
Memel, Naval School	29.89	759.3	29.94	760.5	52.3	11.3	56	WNW			6		2s					Squally.	Reinbrecht and Skalweit.
Neufahrwasser	30.05	763.2	30.07	763.6	53.6	12.0	56	NW			3		3			0.020	0.5		A. Lothes.
Posen	29.88	759.0	30.18	766.5	52.3	11.3	58	NW			8		3			0	0		Dr. Magener.
Strassburg (in Alsace)	29.81	757.2	30.37	771.3	55.4	13.0	64	NE			1		1	NE		0.094	2.38		Astronomical Observatory.
Stuttgart	29.38	746.2	30.34	770.5	52.7	11.5	60	E			1		4	E		0	0		Prof. Schoder.
Treves, (Trier)	29.81	757.1	30.34	770.5	56.8	13.8	54	NE			4		0			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.82	732.0	30.32	770.2	50.7	10.4	58	N	3.1	1.4			6ck	N		0.276	7.0		Dr. Von Bebber.
Wustrow, Naval School	30.14	765.6	30.17	766.2	54.7	12.6	70	WNW			5		4s			0.134	3.4		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.5	29.97	761.1	78.8	26.0		SW			1.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.24	742.6	29.70	754.4	92.2	33.4	43	E					1	WSW		0	0		D. clouds
Bombay	29.64	752.9	29.68	753.9	85.7	29.8	79	W	7	3.1			10		SW	0	0		Overcast
Poona	27.73	704.2	29.73	755.0	78.4	24.7	80	SE					10		SE	0.29	7.4		Overcast
Lahore	28.92	734.6	29.65	753.0	90.3	32.4	43	Calm	2.1	0.9						0	0		Blue sky
Belgaum	27.18	690.4	29.71	754.6	76.0	23.9	91	W	8	3.6			10		W	1.18	30.0		Showery
Roorkee	28.76	730.5	29.64	752.9	85.8	29.9	66	Calm	2	0.9			1			0	0		
Agra	29.10	739.0	29.64	752.9	94.6	34.8	36	N								0	0		
Nagpur	28.65	727.6	29.68	753.9	81.6	27.6	77	Calm	2.9	1.3			9		NW	0	0		Gloomy
Lucknow	29.29	743.9	29.65	753.1	87.9	31.1	70	Calm	0.5	0.2			10			0	0		Overcast
Allahabad	29.36	745.4	29.66	753.2	82.7	28.2	84	Calm	0.6	0.3			1			0	0		D. clouds
Patna	29.49	749.1	29.67	753.6	85.4	29.7	79	Calm	0.2	0.1			10			0	0		Overcast
Hazaribagh	27.69	703.3	29.70	754.3	77.6	25.3	74	WNW	2.6	1.2			9		W				Thunder-storm
Cuttack	29.63	752.5	29.71	754.6	85.0	29.4	75	SSW	1.6	0.7			3			0	0		D. clouds
Calcutta (Alipore)	29.66	753.5	29.69	754.0	80.4	26.9	93	NNW	2	0.9			9			0	0		D. clouds
Goalpara	29.29	744.0	29.68	753.9	77.7	25.4	95	WNW	2.1	0.9			9			0.39	9.9		D. clouds
Chittagong	29.62	752.5	29.72	754.8	83.0	28.3	87	SW	1.1	0.5			2			0	0		Misty
Sibsagar	29.36	745.8	29.70	754.2	84.6	29.2	77	ENE	0.4	0.2			10	SSE	SSE	0	0		D. clouds
Jubbulpore	28.34	719.8	29.68	754.0	84.6	29.2	76	ESE	2.5	1.1			1			0.09	2.8		D. clouds

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.69	754.1	30.10	764.4	62.6	17.0	60	N	1.8	0.8			4			0.189	4.8		Prof. Giovanni Clodig.
Padua	29.94	760.4	30.05	763.2	69.6	20.9	68	E	1.3	0.6			4	NE		0.563	14.3		Prof. Dott. Lorenzoni
Vicenza	29.85	758.2	30.04	763.0	71.1	21.7	60	SE	1 3	0.6			7	W		0.114	2.9		Conte Alm. Da Schio.
Bergamo	28.74	729.9	30.03	762.8	72.0	22.2	57	SW			1		6			0.016	0.4		Prof. Trionfini Carlo.
Milan	29.50	749.4	30.01	762.3	73.8	23.2	52	S			2		1	NW		0	0		Prof. Schiaparelli.
Moncalieri	29.15	740.4	30.05	763.3	69.8	21.0	60	SW	1.8	0.8			1			0	0		Prof. P. F. Denza.
Mondovi	28.17	715.5	30.06	763.5	66.2	19.0	57	W			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.82	757.3	30.04	762.9	70.7	21.5	77	E			6		2	E		0	0		Prof. L. Vassallo.
Genoa	29.86	758.5	30.03	762.8	74.1	23.4	59	SW	3.8	1.7			0			0.08	0.2		Prof. G. M. Garibaldi.
Parma	29.74	755.3	30.05	763.2	73.8	23.2	54	NNE			2		4			0	0		Prof. P. Pigorini.
Florence	29.78	756.4	30.03	762.8	74.3	23.5	55	NW			2		3			0.012	0.3		Cav. F. Meucci
Leghorn	29.92	759.9	30.00	762.0	72.7	22.6	69	SW	5.6	2.5			3			0	0 /		Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.52	724.5	30.07	763.6	65.5	18.6	76	N			2		10			0	0		Prof. P. Serpieri.
Rome	29.87	758.5	30.05	763.2	76.8	24.9	65	W	9.4	4.2			6			0	0		Prof. P. G. S. Ferrari.
Naples, O. U	29.88	758.9	30.08	763.9	76.6	24.8	62	S			2		4	NW		0	0		Prof. L. Palmieri.
Lecce	29.81	757.2	30.07	763.6	74.3	23.5	56	ENE	1.3	0.6			1			0	0		Prof. C. De Giorgi.
Cagliari	29.82	757.5	30.01	762.3	79.7	26.5	28	NW			2		0			0	0		Prof. A. Pacinotti.
Cosenza	29.16	740.7	30.04	762.9	75.7	24.3	73	SW	4.3	1.9			2			0	0		Prof. F. D. Conti.
Palermo	29.81	757.2	30.07	763.6	73.8	23.2	63	ENE	3.1	1.4			3			0	0		Prof. G. Cacciatore.
Syracuse	29.96	760.9	30.03	762.7	74.7	23.7	77	SSE	9.8	4.4			4	WNW		0	0		Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.																			Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.89	759.2	30.08	764.0	72.1	22.3	89	WSW	0.7	0.3			1c;cs			0	0	Clear.	I. Arai, Director.
Tokei (Yeddo) Observatory	30.14	765.5	30.20	767.1	65.9	18.8	92	ENE	3.3	1.5			8s			0.005	0.13	Cloudy	Prof. P. V. Veeder.
Tokei (Yeddo) University																			

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					62.6	17	61	N			4	2cs	0			0	0	Clear	P. Ceballos.
Guadalajara	25.06	636.5	30.03	762.6	57.6	14.2	70	SW			1	9		S		0	0	Very cloudy	Prof. L. Perez
Guanajuato																			F. Ortiz.
Leon	24.42	620.3	29.97	761.3	60.8	16.0	88	SW			1	4c	2k	NW	Calm	Inap.	Inap.	½ cloudy	Prof. M. Leal.
Mexico	23.11	586.9	30.17	766.2	50.9	10.5	83	Calm	0	0		0	3sk			0	0	Clear	Central Observatory.
Pabellon, (Aguascalts)					61.3	16.3	80	W			1	0	2ks		NE	0	0	Clear	M. V. de Leon, M. E.
Puebla																			Prof. B. Gonzalez.
Tlacotalpam	29.82	757.4	29.83	757.7	77.5	25.3	91	W			2	0	0			0	0	Clear	M. M. Cházaro.
San Luis Potosi	24.16	613.5	30.10	764.5	56.5	13.6	38	E				0	5		E	0	0	Hazy	G. Barroeta, M. D.
Vera-Cruz	29.92	759.9	29.95	760.6	78.8	26.0	84	NW	4.0	1.8		0	3k			0	0	½ cloudy	Prof. J. Rosseli.
Zacatecas																			J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.4	30.01	762.2	46.9	8.3	86	NNE	0.4	0.2		1	0	Calm		0	0	Clear	Prof. P. Spina.
Durango	24.21	614.8	29.99	761.8	66	18.9	82	E			1	0	0			0	0	Clear	M. V. de Leon, C. E.
Colima	28.34	719.7	29.95	760.8	79.2	26.2	90	E	2.3?	4.5?		0	9		W	0.307	7.8	½ cloudy	R. Banda, C. E.
San Juan E. Michapam																			Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.37	771.4	30.37	771.4	61.7	16.5		S			2					0.051	1.3		
Groningen	30.26	768.6	30.31	769.9	55.0	12.8		NW			2					0.146	3.7		
Helder	30.32	770.0	30.32	770.0	56.8	13.8		WNW			1					0	0		
Hellevoetsluis	30.34	770.7	30.34	770.7	64.4	18.0	63	SW			2								
Utrecht	30.31	769.8	30.35	771.0	60.8	16.0	69	WNW			2		5			0	0	Cloudy	H. v d Bruk.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.01	762.3	30.07	763.7	46.8	8.2	73	N	5.6	2.5	.....	.....	8	.....	.....	0.079	2.0	Light rain...	
Brônо	29.65	753 1	29.69	754.1	43.9	6.6	74	NW	18	8	.....	.....	9	.....	.....	0.063	1.6	Light rain...	
Christiania	29.75	755.6	29.89	759.3	55.4	13.0	46	WNW	11	5	.....	.....	9	.....	.....	0	0	....	
Tromsô	29.14	740.1	29.18	741.2	42.1	5.6	75	NE	20	9	.....	.....	10	.....	.....	0.661	16.8	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h..4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.61	752.0	29.80	756.8	70.2	21.2	89	SW	18.6	8.3	.....	.....	10	.....	.....	1.102	28.0	.....	Dr. J. A. Sampaio.
Campo Major	29.10	739.0	30.07	763.7	84.7	29.3	30	ESE	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.2	30.06	763.4	75.7	24.3	60	ESE	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.72	755.0	30.07	763.8	79.5	26.4	35	NE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.82	757.4	29.89	759.2	70.9	21.6	89	SSW	23.7	10.6	.....	.....	10	.....	.....	0.020	0.5	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		Observer.
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 10° 46′, E. 13° 01′	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	
Wilna	
Dorpat	
St. Petersburg	
Kuopio	
Kieff	
Nikolaiev	
Kertch	
Moscow	
Lugan	
Archangel	
Tiflis	
Astrakhan	
Krotkowo*	
Kasan	
Orenburg	
Ekaterinburg	
Nukuss	
Tashkend	
Barnaul	
Yeniseisk	
Irkutsk	
Peking, (China)	
Nertchinsk	
Vladivostock	
Nikolaievsk, on the Amoor	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 18° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	72.3	22.4	66	ESE	2.0	0.89	.....	.....	3k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.12	765.1	30.18	766.5	73.8	23.2	57	E	2.1	0.94	.....	.....	.....	.....	.....	0	0	Clear.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.22	691.5	.....	.....	70.9	21.6	51	NE	4.9	2.20	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.92	709.2	30.02	762.6	80.6	27.0	44	SE	5.2	2.33	.....	0	0	.....	.....	0	0	Clear.....	The Staff.
Murcia, Met. Obs'y	29.96	761.0	30.11	764.7	74.7	23.7	63	W	3.2	1.45	.....	5	4	SE	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.17	740.9	30.03	762.8	77.9	25.5	54	SW	4.3	1.94	.....	.....	0	.....	.....	0	0	Clear.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.83	757.7	29.90	759.4	79.5	26.4	93	Calm	0	0	.....	1cs	3k	N	E	0	0	Fair...	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.97	761.3	30.07	763.7	78.1	25.6	60	SSW	10.8	4.8	.....	0	4	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.74	755.5	29.84	757.8	82.8	28.2	88	SW	0	0	.....	3s	1k	S	S	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.28	743.7	29.32	744.7	36.7	2.6	.....	NW	.....	.....	2	.....	10	.....	.....	0.12	3.	Raining	
Umea	29.43	747.4	29.48	748.7	48.6	9.2	58	NW	.....	.....	4	.....	9	.....	.....	0.008	0.2	.....	
Hernosand	29.53	750.0	29.58	751.3	52.2	11.2	42	W	.....	.....	6	.....	2	.....	.....	0.024	0.6	Raining	
Stockholm	29.60	751.8	29.78	756.3	51.4	10.8	51	WNW	.....	.....	4	.....	3	.....	.....	0.264	6.7	.....	
Wisby	29.77	756.1	29.83	757.6	52.5	11.4	66	NW	.....	.....	8	.....	5	.....	.....	0.004	0.1	.....	
Sub-Series.																			
Upsala	29.68	753.8	29.75	755.7	52.5	11.4	49	WNW	.....	.....	.....	.....	7	W	WNW	0.000	0.01	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.8	30.17	766.4	63.1	17.3	52	NNE	.....	.....	6	.....	1	.....	.....	0	0	Clear.....	The Observatory.
Zurich	28.69	728.7	30.30	769.7	54.3	12.4	75	NE	.....	.....	4	.....	4	.....	NE	0.020	0.5	Bright.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.3 m.m.; Thermometer, +2.0 cent.; Relative Humidity, —16 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.99	761.7	70.0	21.1	62	N	12	5.5	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.7	75.7	24.3	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syr.a.) Lee Obs'y	29.73	755.1	29.84	757.9	80.4	26.9	54	NE	.....	.....	3	.....	8ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.50	749.3	29.79	756.7	69	20.6	.....	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	W. R. Bigg.
*Chatham, N. B	29.80	756.9	29.86	758.4	58	14.4	91	Calm	0	0	.....	2k	8ks	SW	SW	Inap.	Inap.	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	58	14.4	94	SW	2	0.9	.....	.....	10s	.....	S	0.270	6.86	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.60	751.8	29.79	756.7	60.7	15.9	81	W	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	29.70	754.4	29.85	758.2	55	12.8	100	NW	.....	.....	1	.....	.....	.....	.....	0.22	5.6	Drizzling....	H. A. Johnson.
Esquimault, B. C	30.12	765.0	30.17	766.3	49.3	9.6	100	Calm	.....	.....	.....	1cs	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	29.81	757.2	29.88	757.7	53	11.7	93	Calm	0	0	.....	.....	Haze	.....	Calm	0.26	6.6	Hazy.....	J. McWilliams.
Fredericton, N. B	29.86	758.4	29.92	760.0	53.2	11.8	93	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	Prof. Harrison.
*Fort Garry Manitoba	28.84	732.5	29.08	753.9	34	1.1	100	NW	2	0.9	.....	5k	2ks	NW	NW	0.620	15.75	Fair.....	James Stewart.
Granton, Ontario	29.72	720.5	29.78	756.4	63	17.2	94	W	.....	.....	1	1cs	0	.....	.....	Inap.	Inap.	Clear	James Grant.
*Halifax, N. S	29.76	755.9	29.89	759.2	55	12.8	91	W	7	3.1	.....	.....	8ks	.....	W	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.44	747.8	29.80	756.9	67.5	19.7	86	SW	.....	.....	5	10cs	0	W	.....	0	0	Cloudy.....	Geo. Dickson, M. A.
Heart's Content, N. F	29.94	760.5	29.96	761.0	44	6.7	84	NE	.....	.....	3	.....	10	.....	.....	0	0	Overcast....	E. Weedon.
*Kingston, Ontario	29.40	749.0	29.82	757.4	64	17.8	80	S	12	5.4	.....	0	0	.....	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	29.82	757.4	29.86	758.4	55.9	12.8	95	S	4	1.8	.....	.....	10n	.....	.....	0	0	Overcast....	C. H. Rigby.
*Montreal, Quebec	29.63	752.6	29.83	757.7	60	15.6	84	E	14	6.3	.....	5cs	2s	Calm	Calm	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.01	736.8	29.68	763.9	64	17.8	94	W	11	4.9	.....	2ck	2ks	SW	SW	0.10	2.5	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.02	737.1	29.75	755.6	63.7	17.6	88	Calm	.....	.....	0	.....	10n	.....	.....	.....	.....	Light rain...	J. F. Jeffers, B. A.
Port Dover, Ontario	29.14	740.1	29.80	756.9	64	17.8	100	SW	15	6.7	.....	.....	10n	.....	SW	0.06	1.5	Light rain...	H. Morgan.
Port Hastings, N. S	29.80	756.9	29.85	758.2	57.7	14.3	.....	NW	4	1.8	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.18	741.2	29.81	757.2	65	18.3	92	W	5	2.2	.....	2k	0	SW	.....	0.02	0.5	Clear.....	M. Payne.
*Quebec, Quebec	29.56	750 8	29.88	758.9	56	13.3	87	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.20	741.7	29.64	752.8	68	20.0	79	SE	4	1.8	.....	.....	8s	.....	W	0	0	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	29.87	758.7	29.92	760.0	52	11.1	96	SW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B	29.76	755.9	29.92	760.0	53	11.7	100	S	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.03	737 3	29.72	754.9	63	17.2	86	SW	11	4.9	.....	2k	2ks	.....	W	Inap.	Inap.	Clear.....	K. Stewart.
Stayner, Ontario	29.02	737.1	29.76	755.9	67	19.4	69	W	8	3.6	.....	8k	0	W	.....	Inap.	Inap.	Cloudy.....	R. J. Cole.
Stratford, Ontario	28.64	724.9	29.78	756 4	63.2	17.3	88	W	14	6.3	.....	8ck	2ks	W	.....	0	0	Fair.....	C. J. MacGregor, M. A
*Sydney, C. B	29.83	757.7	29.85	758.2	56	13.3	95	SW	1	0.4	.....	.....	10s	.....	.....	0.04	1.0	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.40	746.7	29.77	756.1	62	16.7	92	SW	6	2.7	.....	.....	10n	.....	SW	0.02	0.5	Light rain...	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	46.0	7.8	84	NW	.....	.....	.....	5k	5s	.....	.....	0.01	0.3	Cloudy.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Correction for instrum'tal error and temperature. Inches.	Barometer. Correction for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.73	755 1	29.96	761.0	56	13.3	94	S	4	1.8	.....	.....	Fog	.....	S	0	0	Foggy	
Alpena, Michigan	29.08	738.6	29.70	754.4	59	15.0	76	W	10	4.5	.....	2k	0	W	.....	0.33	8.4	Fair	
Atlantic City, New Jersey	30.01	762.2	30.03	762.7	62	16.7	94	NW	2	0.9	.....	0	Fog	.....	NW	0.02	0.5	Clear	
Augusta, Georgia	29.88	758.9	30.07	763.5	65	18.3	89	NW	3	1.3	.....	0	Haze	.....	.....	0	0	Hazy	
Baltimore, Maryland	29.98	761.5	30.02	762.5	63	17.2	100	SE	2	0.9	.....	.....	10s;fg	.....	Calm	0	0	Foggy	
Barnegat, New Jersey	30.01	762.2	30.03	762.7	68	20.0	84	W	6	2.7	.....	0	Fog	.....	W	0	0	Clear	
Bismarck, Dakota	27.95	709.9	29.80	756.9	48	8.9	56	W	18	8.0	.....	5cs	0	NW	.....	0.01	0.3	Fair	
Boerne, Texas	28.56	725.4	.....	.....	78	25.6	78	SE	4	1.8	.....	5k	0	SE	.....	0	0	Fair	
Boise City, Idaho	27.39	695.7	30.35	770.9	38	3.3	81	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.82	757.4	29.98	761.5	66	18.9	74	SW	10	4.5	.....	1cs	Haze	SW	SW	0	0	Hazy	
Brackettville, Texas	28.82	732.0	29.81	757.2	76	24.4	82	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.67	728.2	29.65	753.1	45	7.2	84	W	14	6.3	.....	0	2s	.....	W	0.02	0.5	Fair	
Brownsville, Texas	29.88	758.9	29.95	760.7	75	23.9	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.10	739.1	29.77	756.1	67	19.4	74	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	55	12.8	62	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.59	754.1	29.94	760.5	60	15.6	82	S	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Cairo, Illinois	29.60	751.8	29.98	761.5	66	18.9	84	W	2	0.9	.....	1c	0	W	.....	0.28	7.1	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	43	6.1	58	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	61	16.1	26	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.29	769.4	52	11.1	35	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp o, California	27.40	696.0	29.97	761.2	38	3.3	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.99	761.7	30.00	762.0	72	22.2	90	NE	15	6.7	.....	5k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.01	762.2	30.04	763.0	69	20.6	80	NE	6	2.7	.....	0	5s	.....	SW	0	0	Fair	
Cape Lookout, N. Carolina	29.98	761.5	29.99	761.7	70	21.1	90	NE	20	8.9	.....	5k	0	NE	.....	0	0	Fair	
Cape May, New Jersey	30.02	762.5	30.04	763.0	65	18.3	94	Calm	0	0	.....	0	Fog	.....	.....	0	0	Foggy	
Castroville, Texas	29.19	741.4	29.86	758.4	77	25.0	86	SE	4	1.8	.....	0	5s	.....	SE	0	0	Fair	
Charleston, South Carolina	30.00	762.0	30.07	763.8	69	20.6	90	NE	5	2.2	.....	0	8s	.....	NE	0	0	Fair	
Cheyenne, Wyoming	24.10	612 1	30.04	763.0	43	6.1	51	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.21	741.9	29.89	759.2	55	12.8	74	SW	6	2.7	.....	0	0	.....	.....	0.05	1.3	Clear	
Cincinnati, Ohio	29.34	745.2	29.97	761.2	68	20.0	90	W	5	2.2	.....	.....	10n	.....	NW	0.07	1.8	Light rain	
Cleveland, Ohio	29.18	741.2	29.87	758.7	67	19.4	84	SW	10	4.5	.....	0	5ks	.....	W	Inap.	Inap.	Fair	
Coleman City, Texas	28.18	715.8	29.81	757.2	62	16.7	67	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.09	738.9	29.90	759.4	66	18.9	90	W	6	2.7	.....	2k	5ks	W	W	0.01	0.3	Fair	
Corpus Christi, Texas	28.97	713.0	29.71	754.6	59	15.0	70	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.50	749.3	29.95	760.7	74	23.3	90	S	4	1.8	.....	2cs	5s	Calm	S	0	0	Fair	
Davenport, Iowa	29.31	744.5	29.94	760.5	55	12.8	74	SW	4	1.8	.....	0	0	.....	.....	0.27	6.9	Clear	
Decatur, Texas	28.81	731.8	29.95	760.7	66	18.9	69	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.19	741.4	29.97	761.2	68	20.0	60	NE	5	2.2	.....	2k	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.87	631.7	30.09	764.3	46	7.8	19	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.01	736.8	29.87	758.7	53	11.7	67	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Detroit, Michigan	29.19	741.4	29.84	757.9	61	16.1	77	W	7	3.1	.....	5k	0	W	.....	0.02	0.5	Fair	
Dodge City, Kansas	27.45	697.2	29.73	755.1	51	10.6	53	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.17	740.9	29.86	758.4	55	12.8	74	SW	6	2.7	.....	0	0	.....	.....	0.44	11.2	Clear	
Duluth, Minnesota	28.93	734.8	29.59	751.6	51	10.6	72	W	10	4.5	.....	0	0	.....	.....	0.30	7.6	Clear	
Eagle Pass, Texas	29.20	741.7	29.91	759.7	73	22.8	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.85	758.2	29.92	760.0	55	12.8	93	SW	3	1.3	.....	10k	Fog	W	SW	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	74	23.3	93	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	68	20.0	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.14	740.1	29.82	757.4	68	20.0	79	SW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Escanaba, Michigan	29.04	737.6	29.68	753.9	51	10.6	79	SW	10	4.5	.....	0	0	.....	.....	0.65	16.5	Clear	
Florence, Arizona	28.42	721.9	30.02	762.5	60	15.6	44	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.59	650.0	29.65	753.1	49	9.4	50	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.24	641.1	30.20	767.1	57	13.9	38	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.49	749.0	30.02	762.5	63	17.7	73	E	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Fort Griffin, Texas	28.71	729.2	29.96	761.0	60	15.6	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.76	705.1	29.59	751.6	75	23.9	77	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.80	731.5	29.89	759.2	59	15.0	48	N	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Fredericksburg, Texas	28.21	717.3	29.72	754.9	79	26.1	70	SW	.....	.....	1	0	2ks	.....	Calm	0	0	Fair	
Galveston, Texas	29.93	760.2	29.97	761.2	78	25.6	82	SE	2	0.9	.....	0	5ks	.....	SE	0	0	Fair	
Graham, Texas	28.89	733.8	29.92	760.0	67	19.4	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.23	742.4	29.85	758.2	62	16.7	67	NW	16	7.2	.....	0	0	.....	.....	0.72	18.3	Clear	
Indianapolis, Indiana	29.20	741.7	29.96	761.0	62	16.7	77	NW	1	0.4	.....	0	0	.....	.....	0.07	1.8	Clear	
Indianola, Texas	29.95	760.7	29.98	761.5	80	26.7	87	S	3	1.3	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.81	731.8	29.92	760.0	62	16.7	72	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.01	762.2	30.03	762.7	71	21.7	85	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.29	744.0	29.89	759.2	61	16.1	71	SW	11	4.9	.....	0	Haze	.....	Calm	0.20	5.1	Clear	
Key West, Florida	29.89	759.2	29.92	760.0	81	27.2	74	NE	11	4.9	.....	5k	0	NE	.....	0	0	Fair	
Kittyhawk, North Carolina	30.00	762.0	30.03	762.7	70	21.1	95	NE	16	7.2	.....	0	2s	.....	NE	0	0	Fair	
Knoxville, Tennessee	29.09	738.9	30 08	764.0	59	15.0	82	E	1	0.4	.....	0	Fog	.....	E	0	0	Clear	
La Crosse, Wisconsin	29.05	737.8	29.77	756.1	54	12.2	80	S	8	3.6	.....	2k	0	Calm	.....	0.42	10.7	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	60	10.0	51	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.50	749.3	29.53	757.7	78	25.6	82	SE	3	1.3	.....	5k	0	S	.....	0	0	Fair	
Lead City, Dakota	24.83	630.7	30.10	764.5	40	4.4	65	W	6	2.7	.....	10k	0	NW	.....	0	0	Cloudy	
Leavenworth, Kansas	29.11	739.4	29.95	760.7	52	11.1	73	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.53	750.0	29.86	758.4	58	14.4	78	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.44	747.8	29.95	761.5	67	19.4	84	SW	6	2.7	.....	.....	10s	.....	NW	0.06	1.5	Cloudy	
Lynchburg, Virginia	29.37	746.0	30.04	763.0	61	16.1	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.86	733.0	29.83	757.7	53	11.7	86	W	8	3.6	.....	0	0	.....	.....	0.69	17.5	Clear	
Marquette, Michigan	28.89	733.8	29.57	751.1	53	11.7	67	S	8	3.6	.....	0	0	.....	.....	0.32	8.1	Clear	
Mason, Texas	28.34	719.8	30.04	763.0	70	21.1	90	SE	2	0.9	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.72	754.9	30.02	762.5	71	21.7	90	E	1	0.4	.....	.....	10s	.....	NE	0.04	1.0	Cloudy	
Milwaukee, Wisconsin	29.13	739.9	29.81	757.9	57	13.9	75	SW	15	6.7	.....	0	2s	.....	Calm	0.60	17.0	Fair	
Mobile, Alabama	30.00	762.0	30.05	763.3	70.5	21.4	95	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.83	757.7	30.06	763.5	66	18.9	84	NE	2	0.9	.....	Haze	2s	Calm	Calm	0	0	Hazy	
Morgantown, West Virginia	28.92	734.6	29.94	760.5	63	17.2	83	S	2	0.9	.....	5cs	2s	Calm	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.88	606.5	30.24	768.1	48	8.9	77	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Nashville, Tennessee	29.48	748.8	30.00	762.0	69	20.6	75	E	2	0.9	.....	.....	10s	.....	S	0	0	Threatening	
New Haven, Connecticut	29.91	759.7	30.02	762.5	66	18.9	84	W	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
New London, Connecticut	29.88	761.5	30.03	762.7	65	18.3	94	Calm	0	0	.....	0	8s	.....	W	0	0	Fair	
New Orleans, Louisiana	29.96	761.0	30.01	762.2	79	26.1	82	NE	4	1.8	.....	0	0	.....	.....	0.53	13.5	Clear	
Newport, Rhode Island	29.96	761.0	30.01	762.2	64	17.8	94	SW	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
New York, New York	29.86	758.4	30.03	762.7	64	17.8	94	SW	9	4.0	.....	.....	10ks;fg	.....	SW	0	0	Cloudy	
Norfolk, Virginia	29.99	761.7	30.05	763.3	68	20.0	95	NE	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
North Platte, Nebraska	27.14	689.3	29.76	755.9	40	4.4	65	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.21	767.3	30.25	768.3	49	9.4	93	S	6	2.7	.....	.....	10n	.....	Calm	0.07	1.8	Light rain	
Omaha, Nebraska	28.81	731.8	29.89	759.2	48	8.9	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.54	760.3	29.85	758.2	61	16.1	82	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Pembina, Dakota	28.79	731.3	29.63	752.6	34	1.1	100	W	4	1.8	.....	0	5s	.....	NW	0.95	24.1	Fair	
Philadelphia, Pa	30.00	762.0	30.05	763.3	64	17.8	94	SW	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Phœnix, Arizona	28.78	731.0	.....	.....	62	16.7	46	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.93	455.7	30.14	765.5	24	— 4.4	61	W	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.17	613.9	29.91	760.5	47	8.3	41	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.12	739.6	29.90	759.4	64	17.8	78	S	7	3.1	.....	2k	0	W	.....	0	0	Fair	
Port Huron, Michigan	29.16	740.7	29.79	756.7	64	17.8	73	W	12	5.4	.....	0	0	.....	.....	0.08	2.0	Clear	
Portland, Maine	29.89	759.2	29.94	760.5	55	12.8	93	SW	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	30.26	768.6	30.36	771.1	52	11.1	93	SE	3	1.3	.....	0	8s	.....	SW	0.13	3.3	Cloudy	
Prescott, Arizona	24.76	628.9	30.12	765.0	45	7.2	61	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.21	741.9	30.02	762.5	69	20.6	79	E	3	1.3	.....	2ck	0	W	.....	0	0	Fair	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	73	22.8	85	NE	0	4.0	.....	5k	0	NE	.....	0	0	Fair	
Red Bluff, California	29.67	753.6	30.02	762.5	62	16.7	36	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.76	755.9	29.97	761.2	75	23.9	85	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.21	741.9	29.79	756.7	69	20.6	65	SW	12	5.4	.....	1c	0	Calm	.....	0	0	Clear	
Roseburg, Oregon	29.80	756.9	30.40	772.1	40	4.4	96	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.91	759.7	29.99	761.7	56	13.3	57	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.46	748.3	30.02	762.5	61	16.1	77	W	4	1.8	.....	0	0	.....	.....	0.23	5.8	Clear	
St. Marks, Florida	30.02	762.5	30.04	763.0	64	17.8	83	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.85	732.8	29.66	753.4	49	9.4	71	SW	8	3.6	.....	0	0	.....	.....	0.13	3.3	Clear	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	41.0	5.0	74	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.28	743.7	29.84	757.9	76	24.4	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.84	757.9	29.91	759.7	58	14.4	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.24	742.7	29.88	758.9	66	18.9	89	SW	10	4.5	.....	0	0	.....	.....	0.01	0.3	Clear	
Sandy Hook, New Jersey	30.00	762.0	30.03	762.7	64	17.8	100	W	10	4.5	.....	.....	Fog	.....	Calm	0	0	Foggy	
San Francisco, California	29.95	760.7	30.01	762.2	56	13.3	87	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.35	593.1	29.89	759.2	40	4.4	25	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.95	760.7	30.04	763.0	70	21.1	95	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.82	757.4	30.03	762.7	73	22.8	95	NE	4	1.8	.....	.....	10s	.....	N	0	0	Cloudy	
Silver City, New Mexico	24.34	618.2	.....	.....	60	10.0	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.02	762.5	30.06	763.5	66	18.9	95	N	7	3.1	.....	.....	10s	.....	N	0	0	Cloudy	
Springfield, Massachusetts	29.86	758.4	29.99	761.7	63	17.2	83	S	1	0.4	.....	5c	0	NW	.....	0	0	Fair	
Stockton, Texas	26.96	684.8	29.96	761.0	58	14.4	53	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.92	760.0	29.98	761.5	59	15.0	94	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.22	742.2	29.87	758.7	65	18.3	73	SW	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Tucson, Arizona	.....	.....	.....	.....	62	16.7	44	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.01	762.2	30.04	763.0	72	22.2	90	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.92	760.0	.....	.....	46	7.8	69	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	S	.....	.....	4	.....	10n	.....	S	0.22	5.6	Cloudy	
Uvalde, Texas	29.07	738.4	29.86	758.4	72	22.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.82	757.4	30.07	763.8	74	23.3	95	SW	4	1.8	.....	Haze	0	Calm	.....	0	0	Fair	
Virginia City, Montana	24.35	618.5	29.83	757.7	40	4.4	56	NW	12	5.4	.....	0	5s	.....	Calm	0	0	Fair	
Visalia, California	29.66	753.4	30.04	763.0	51	10.6	73	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.93	760.2	30.04	763.0	63	17.2	100	S	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	50	10.0	72	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.97	761.2	30.04	763.0	65	18.3	94	NE	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Winnemucca, Nevada	25.81	655.6	30.17	766.3	38	3.3	63	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.97	761.2	30.02	762.5	66	18.9	94	W	6	2.7	.....	0	5ks	.....	SW	0	0	Fair	
Yankton, Dakota	28.64	727.4	29.94	760.5	43	6.1	83	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.69	754.1	29.85	758.2	68	17.2	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.80	756.9	29.85	758.2	26.5	— 3.1	94	NW	18	8.0	.....	2c	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.88	758.9	29.90	759.4	82	27.8	78	E	1.2	0.5	.....	0	4n	.....	E	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.79	756.7	29.81	757.2	81	27.2	87	NE	.....	.....	1	0	2s	.....	NE	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	84	28.9	83	SW	4	1.8	.....	8c	4ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	83	28.3	91	Calm	0	0	.....	8c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.76	755.9	29.84	757.9	83.5	28.6	.....	SW	6.7	3.0	.....	.....	.....	.....	.....	0.30	7.6	Partly cl'dy	F. M. Everett.
Paramaribo, D.Guiana, S.A.	29.98	761.5	29.98	761.5	84	28.9	75	E	.....	.....	3	3c	5k	E	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	64.2	17.9	87	Calm	0	0	.....	.....	10n	.....	.....	0.15	3.8	.....	Thomas Herrar.
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NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,383 (?) ft., or 466.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,176 (?) ft., or 312.7 (?) m.; Camp Grant, 4,888 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,600 (?) ft., or 1,096.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,760 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,586.0 (?) m., Fort Griffin, 1,470 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,070 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.6 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.0 ft., or 313.3 m.; Medellin 4,676 ft., or 1,426.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,160.7 ft., or 4,318.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,680 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,645 (?) ft., or 776.7 (?) m.; Virginia City, 5,450 (?) ft., or 1,670.8 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.664 in.; Fort Davis, 4.86 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.86 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.16	766.1	74	23.3	74	23.3	90	NE	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.03‡	762.7‡	.....	.....	56	13.3	94	WSW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan.....	30.16*	766.1*	71.5	21.9	67.5	19.7	92	NE	.....	.....	1	.....	1k	.....	E	0	0	.....	.....	Fair.....	
Adams. S. 45° 34′, W. 107° 00′.....	29.32	744.7	72	22.2	49	9.4	93	NW	.....	.....	5–6	.....	5	.....	NW	.....	.....	Rough	NNW	Fair	
Alaska, Valparaiso, Chili.....	30.16	766.1	62	16.7	53	11.7	86	ENE	.....	.....	1	.....	Fog	.....	.....	0	0	Smooth	.....	Foggy	
Alliance, Messina, Sicily.....	30.04‡	763 0‡	.....	.....	75	23.9	61	NE	.....	.....	3–4	.....	3	.....	NE	.....	.....	.....	.....	Hazy.....	
Ashuelot. Yokohama, Japan	30.24	768.1	70	21.1	70	21.1	70	NE	.....	.....	3	.....	2	.....	.....	.....	.....	Ground	N;E	Clear.....	
Canonicus, New Orleans, La.....	30.06	763.5	54	12.2	75	23.9	86	N	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Fair.....	
Colorado. New York, N. Y.....	30.05‡	763.3‡	.....	.....	66	18.9	94	SW	9	4.0	.....	.....	10	.....	wsw	0	0	.....	.....	Foggy	
Constitution, Havre, France.....	.....	.....	.....	.....	60	15.6	88	SE	.....	.....	2	.....	9	.....	Calm	.....	.....	.....	.....	Cloudy	
Despatch, Volo, Turkey.....	29.98‡	761.5‡	.....	.....	75	23.9	66	SSE	.....	.....	3	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Essex, S. 30° 44′, W. 35° 25	30.28	769.1	64	17.8	63	17.2	83	ESE	.....	.....	4	.....	5	.....	ESE	.....	.....	Light	SE	Fair	
Franklin, Norfolk, Va.....	30.15	765.8	70	21.1	69	20.6	100	N	3	1.3	.....	.....	10	.....	NE	0	0	.....	.....	Cloudy.....	
Gettysburg N. 37° 10′ 56″, E. 7° 41′ 50″	30.04‡	763.0‡	.....	.....	77	25.0	100	ENE	.....	.....	2	.....	7	.....	Calm	0	0	Smooth	.....	Hazy.....	
Guard, S. 13° 07′, W. 38° 26′.....	30.03	762.7	79	26.1	75	23.9	95	Calm	.....	.....	0	.....	8	.....	SE	.....	.....	Smooth	.....	Misty.....	
Hartford, Rio de Janeiro, Brazil ...	29.99	761.7	.....	.....	70	21.1	80	NNW	4.8	2.1	.....	.....	10	.....	.....	0.23	5.8	.....	.....	Cloudy.....	
Marion, N. 38° 45′, E. 15° 18′.....	30.09	764.3	76	24.4	80	26.7	58	SSE	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Michigan, Erie, Pa.....	29.86†	758.4†	.....	.....	68	20.0	90	SSW	.....	.....	6	.....	10	.....	SSW	.....	.....	.....	.....	Rainy.....	
Monocacy. Yokohama, Japan	30.19‡	766.8‡	.....	.....	70	21.1	85	NNE	.....	.....	1–2	.....	2	.....	NNE	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.....	30.21	767.3	74	23.3	72	22.2	90	NNE	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Onward, Callao, Peru.....	30.11†	764.8†	.....	.....	62	16.7	88	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	29.96	761.0	72	22.2	68	20 0	84	ENE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Passaic, Washington, D. C.....	.....	.....	.....	.....	64	17.8	100	Calm	.....	.....	0	.....	2	.....	NW	.....	.....	.....	.....	Clear.....	
Plymouth. Portland, Maine.....	30.11	764.8	57	13.9	56	13.3	94	WSW	.....	.....	2	.....	Fog	.....	.....	.....	.....	.....	.....	Foggy	
Powhatan, Portsmouth, N. H.....	30.00‡	762.0‡	.....	.....	56	13.3	94	WNW	2.4	1.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Ranger. Hong-Kong, China	30.02	762.5	83	28.3	82	27.8	91	E	.....	.....	2–3	.....	8	.....	E	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas.....	29.89	759.2	77	25.0	77	25.0	95	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md.....	29.98‡	761.5‡	.....	.....	67	19.4	89	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Saratoga. Philadelphia, Pa.....	30.00	762.0	.....	.....	63	17.2	94	S	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	29.97	761.2	68	20.0	63	17.2	100	SW	8	3.6	.....	.....	10	.....	SW	0	0	.....	.....	Foggy	
Supply, Havre, France.....	30.36	771.1	63	17.2	62	16.7	77	S	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Swatara, Boston, Mass.....	29.99‡	761.7‡	.....	.....	63	17.2	89	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Trenton, N. 42° 23′, W. 13° 42′.....	30.13‡	765.3‡	.....	.....	66	18.9	89	E	.....	.....	1	.....	8	.....	N;E	0	0	Mod'ate	NE	Cloudy.....	
Tuscarora, Pichilinque, Mexico.....	29.69	754.1	81	27.2	82	27.8	71	SSE	.....	.....	1	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Vandalia, Cartagena, Spain.....	30.12‡	765.0‡	.....	.....	74	23.3	76	NE	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.....	.....	.....	.....	.....	67	19.4	74	SW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the co/peration of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama, N. 43° 20′, W. 124° 45′		30.41*	772.4*				Calm			0		2				Mod'ate	WNW	Clear	Capt. Seabury.
S. S City of Peking, N. 37° 16′, W. 125° 57′		30.13†	765.3†	58	14.4	94	NW			6						Rough	NW	Blue sky	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 10° 42′, W. 86° 37		29.90†	759.4†	79	26.1	100	SSW			2–3		10		Calm		Mod'ate	SSW	Showery	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 43° 35′, W. 124° 47′		30.30†	769.6†	56	13.3	87	N			1		0			0	Very heavy	NW	Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 42° 06′, W. 160° 26′		29.54*	750.3*	64	17.8	89	S			4		n		SW		Mod'ate	SW	Drizzling	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 36° 47′, E. 162° 05′		30.10	764.5	65	18.3	66	N			4		4		N		2	NW	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 11′, W. 36° 27′		29.38	746.2	59.5	15.3	65	SSW			5		5		SSW	2 hours	4–5	SSW	Squally	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Liverpool				57	13.9	94	S			2		6		S	Light			Clearing	Captain Sargent.
S. S. Ohio, Philadelphia, Pa		30.01	762.2	69	20.6	95	WNW			1		10		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 29′ W. 19° 07′		30.02*	762.5*				S	6	2.7			3		SE		Mod'ate	S	Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 17° 06′, W. 64° 38		29.82	757.4	86	30.0	76	SSE	4	1.8			5k		SE	0	Smooth		Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 3, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSÉ mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador			30.15	765.8	75.4	24.1	71	N			3		1			0	0	Very fair	Dr. Ollive.
Nemours			30.10	764.5	76.3	24.6	71	NE			3		1			0	0	Very fair	Kesxuche.
Algiers			30.15	765.9	77.0	25.5	65	NNE			5		4			0	0	Cloudy	Tourillere.
La Calle			30.14	765.6	79.2	26.2	68	E			3		0			0	0	Clear	Foufrede.
Tunis			30.20	767.0	78.8	26.0		NNE			5		7			0	0	Very cloudy	Jacques.
Sfax			30.09	764.2	74.1	23.4	42	N			3		2			0	0	Fair	Gau.
Saida			30.10	764.4	67.6	19.8	77	SSE			1		8			Blank	Blank	Very cloudy	Herbin.
Tebessa			30.07	763.6	77.0	25.0	71	SSE			5		10			3.623	92.0	Covered	Watrin.
Geriville			30.21	767.3	70.2	21.2	43	E			1		1			0.996	25.3	Very fair	Brugnlaux.
Laghouat			30.13	765.4	86.9	30.5	33	ESE			1		1			0	0	Very fair	Hertrand.
Biskra																			Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.76	756.0	30.32	770.1	57.0	13.9	61				1		5			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.83	760.1	30.31	769.9	52.5	11.4	71	W			1		9			0.008	0.2		Dr. Wierzbiski
Eperies	29.36	745.7	30.24	768.2	53.2	11.8	51	N			3		5c;s		S	0.201	5.10		Julius Mikolik.
Gratz	29.06	738.1	30.32	770.2	55.0	12.8	68	S			2		0			0.110	2.80		Andreas Rospini.
Hermannstadt	28.65	727.8	30.16	766.1	48.0	8.9	61	NW			5		8			0.264	6.7	Raining	Prof. A. Gottschling.
Kremsmünster	28.91	734.3	30.26	768.6	53.4	11.9	62	ENE			3		1			0	0		Prof. U. Wagner
Lemberg	29.22	742.3	30.23	767.8	48.9	9.4	75	SW			2		9			0	0		Dr. T. Stanecki.
Pola	30.14	765.6	30.26	768.5	63.5	17.5	46	ENE			3		0			0.181	4.6		I. R. Hydrographic Office
Szathmar	29.78	756.3	30.28	769.1	46.8	8.2	93	N			4		10			0.268	6.8	Raining	Julius Csics, S. J.
Szegedin	29.97	761.2	30.25	768.4	55.4	13.0	62	N			1		8			0	0		Karl Stancel.
Trieste	30.17	766.4	30.28	769.0	64.4	18.0	45	ENE			1		0			0	0	Clear	P. Busin.
Vienna	29.60	751.8	30.32	770.0	56.3	13.5	68	ENE			1		4			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	30.05	763.3	30.25	768.4	56.5	13.6	66	E			1	0	0			0	0		Royal Observatory
Furnes	30.26	768.6	30.28	769.2	59.9	15.5	63	WSW			1		9			0	0		M. E. de Cae.
Maeseyck	30.17	766.2	30.30	769.5	53.8	12.1	65	WSW			2		8			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.85	758.2	29.94	760.5	62.7	17.1	.....	WSW	11	4.9	.....	.....	3	.....	.....	0.095	2.41	Blue sky.....	W. Boswell.
Ardrossan	30.02	762.5	30.04	763.0	57	13.9	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	George Carrick.
Armagh, Observatory	.....	.....	30.09	764.3	61.0	16.1	.....	SSW	11	4.9	.....	.....	4	.....	.....	.....	.....	D. clouds....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.14	765.5	61.9	16.6	.....	WNW	10	4.5	.....	.....	3	.....	.....	.....	.....	Blue sky....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.72	754.9	30.12	765.0	59.6	15.3	.....	W	.....	.....	1	.....	4	.....	.....	0.01	0.3	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	80	26.7	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.19	766.8	66.9	19.4	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds....	H.Todd. [H.C.
Cardington	.....	.....	30.21	767.3	62.6	17.0	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	30.08	764.0	30.21	767.3	68.2	20.1	.....	Calm	.....	.....	0	.....	3	.....	.....	.....	.....	Blue sky.....	Lt. G. W. Morris, R. E.
Dartmoor	28.68	728.5	30.15	765.8	56.8	13.8	.....	E	.....	.....	4	.....	3	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	30.05	763.3	30.08	764.0	64	17.8	.....	WSW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	30.21	767.3	30.24	768.1	61	16.1	.....	SSW	.....	.....	3	.....	4	.....	.....	.....	.....	⅜ clouded...	J. Costello.
Falmouth, Observatory	29.96	761.0	30.19	766.8	59.7	15.4	.....	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.91	759.7	71.0	21.7	.....	NE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.67	753.6	29.90	759.4	87	30.6	.....	SW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	30.00	762.0	63	17.2	.....	S	.....	.....	2	.....	7	.....	.....	.....	.....	Gloomy.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.08	764.0	.....	.....	.....	E	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.82	757.4	30.03	762.7	59.5	15.3	.....	SW	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Great Yarmouth	30.18	766.6	30.19	766.8	60	15.6	.....	WSW	.....	.....	2	.....	3	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	30.03	762.7	30.20	767.1	66.6	19.2	.....	WSW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.98	761.5	29.20	767.1	62	16.7	.....	ESE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	30.20	767.1	63	17.2	.....	SE	.....	.....	2	.....	2ck	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	30.09	764.3	30.14	765.5	61	16.1	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.95	760.7	30.24	768.1	62.6	17.0	.....	SSE	.....	.....	2	.....	4	.....	.....	.....	.....	Gloomy.....	J. Fisher.
Kew, Observatory	30.18	766.6	30.22	767.6	61.6	16.4	.....	W	6	2.7	.....	.....	6k	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	30.10	764.5	30.13	765.3	60	15.6	.....	S	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	30.17	766.3	62.4	16.9	.....	SW	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.99	761.7	30.06	763.5	75	23.9	.....	NE	.....	.....	3	.....	2k	.....	.....	.....	.....	D. clouds....	Sergt. Beckett.
Nairn	29.85	758.2	29.94	760.5	60	15.6	.....	SW	.....	.....	3	.....	2	.....	.....	.....	.....	¼ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.77	756.1	81.8	27.7	.....	NW	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	30.00	762.0	30.19	766.8	63.7	17.6	.....	SSW	.....	.....	3	.....	8k;ck	.....	SW	0.008	0.20	Blue sky.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.65	753.1	30.17	766.3	62.2	16.8	.....	SSW	.....	.....	2	.....	9	.....	.....	.....	.....	Hazy.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.20	767.1	63	17.2	.....	WSW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	H. E. Bellamy.
Plymouth	30.12	765.0	30.19	766.8	62.6	16.7	.....	SSE	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	30.06	763.5	30.10	764.5	61	16.1	.....	SSE	.....	.....	3	.....	8	.....	.....	.....	.....	Overcast.....	W. Kennedy.
Saint Ann's Head	30.01	762.2	30.17	766.3	61	16.1	.....	S	.....	.....	2	.....	3	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys	.....	.....	29.87	758.7	52.9	11.6	.....	W	30	13.4	.....	.....	10	.....	.....	.....	.....	Misty.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.99	761.7	68.6	20.3	.....	NNE	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.90	759.4	30.18	766.6	62.3	16.8	.....	SW	.....	.....	1	.....	9	.....	.....	0	0	Overcast.....	W. F. Cooper.
Silloth, Rectory	30.05	763.3	30.08	764.0	65.3	18.5	74	SW	.....	.....	3	.....	0	.....	.....	0	0	Blue sky.....	C. Edith Redford.
Stonyhurst, Observatory	29.74	755.4	30.14	765.5	61.1	16.2	.....	W	.....	.....	2	.....	9	.....	.....	.....	.....	Threatening	Rev. S. J. Perry.
Stornoway, Lewis (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	30.00	762.0	30.22	767.6	64.7	18.2	.....	S	.....	.....	0-1	.....	4	.....	.....	.....	.....	D. clouds....	Rev. C. H. Griffith, F. M. S
Thurso	29.86	758.4	29.92	760.0	54	12.2	.....	WSW	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.18	766.6	64	17.8	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	29.99	761.7	30.02	762.5	61.6	16.4	.....	SE	33	14.8	.....	.....	10	.....	.....	.....	.....	D. clouds....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.43	747.5	57.0	13.9	73	S	.....	.....	3	.....	10k	.....	.....	0	0	Lightning...	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.0	73.8	23.2	60	ESE	14.0	6.3	.....	0	8	.....	ESE	0.03	0.8	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.72	754.9	29.82	757.4	69.3	20.7	45	N	20	8.9	.....	.....	10	.....	.....	0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine	.....	.....	.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle,	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 19° 30', W. 50° 10'	.....	E	D. clouds....	Capt. D. W. A. Quaile.
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [H.
Schooner Traveller, N. 49° 0', W 20° 20'	7	SSE;SSW	D. clouds....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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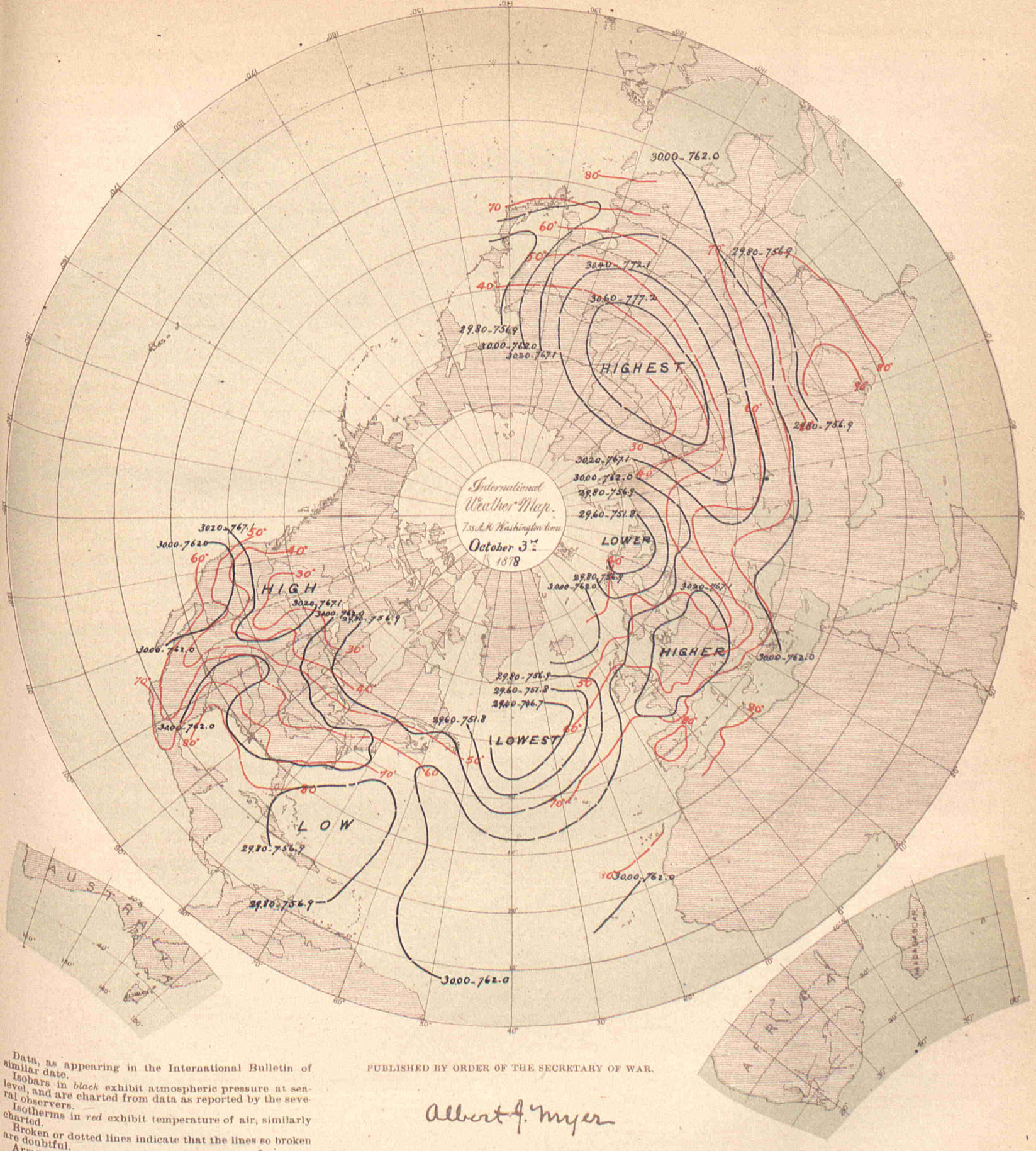
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount: the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; rather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			Mr. Ansart.
San José	26.20	665.5	29.92	760.0	67.1	19.5	92	Calm			0	3c				Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.15	765.9	30.20	767.1	54.3	12.4	62	SW			2		10						
Fanöe	30.13	765.3	30.15	765.8	55.8	13.2	84	WSW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	30.04	763.1	30.06	764.0	46.2	7.9	84	ENE			6		10						Raining.
Vestervig	29.91	759.7	30.08	764.0	53.2	11.8	91	SW			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.74	755.3	30.29	769.3	55.8	13.2	90	NE			1		2			0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.13	765.4	30.17	766.2	60.1	15.6	66	NE			2		0			0	0	Clear	Bonvallet, Director.
Avignon, Normal School	30.13	765.3	30.21	767.3	76.6	24.8	47	N			1		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.67	753.6	30.23	767.8	58.1	14.5	52	E			1		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.97	761.3	30.26	768.6	55.9	13.3	52	E			1		0			0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.36	745.8	30.26	768.5	59.5	15.3	58	S			2		1		E	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	29.35	745.5	30.27	768.9	57.4	14.1	86	W			1		8k		W	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.71	754.5	30.26	768.6	57.2	14.0	58	NE			1	2c		NE		0	0	Slightly cov	A. Wagner, Director.
Brest, Naval Observatory	29.87	758.8	30.12	765.0	68.0	20.0	72	S			1		4		Calm	0	0		The Staff.
Carcassonne, Normal School	29.76	756.0	30.16	766.1	75.6	24.2	34	E			2		0			0	0	Clear	Septembre, Director.
Caen																			M. Lair, Director.
Chartres, Normal School	29.67	753.6	30.24	768.1	58.6	14.8	82	N			2		3		N	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.93	760.2	30.25	768.3	58.6	14.8	76	N			1		2		N	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.84	732.5	30.16	766.0	69.4	20.8	37	NE			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.37	746.0	30.26	768.6	54.5	12.5	70	E			1		kn		E	0	0		Dr. Coulet, Director.
Commune de Grésaque*	29.12	739.6	30.26	768.6	77.0	25.0	48	S			2		5	SW		0	0	½ covered	M. Kina.
Grenoble, Normal School	29.40	747.6	30.15	765.9	66.2	19	68	E			1	1c		S		0	0	Clear	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.95	760.6	30.25	768 4	60.6	15.9	46	SE			1		2		SE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.32	744.6	30.23	767.9	59.7	15.4	73	NW			1		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	30.10	764.6	30.21	767.2	65.1	18.4	66	S			2				S	0	0		T. Carré, Director.
Mâcon, Normal School	30.21	767.3	30.24	768.2	64.4	18	80	Calm			0		0			0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	29.21	741.9	30.26	768.6	53.8	12.1	63	N			1		2ck		SW	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	30.00	761.9	30.19	766.9	82.8	28.2	50	SW			1		0			0	0	Clear	Boyer, Director.
Privas, Normal School	29.17	740.8	30.20	767.1	72.1	22.3	42	N			1		0			0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.34	643.6			51.3	10.7	46	W			2		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.17	766.2	30.20	767.0	67.3	19.6	64	E			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.16	766.1	30.25	768.3	62.4	16.9	48	SE			1		0			0	0	Clear	F. Lucard, Director.
Saint Malo (Port)			30.17	766.4	63.9	17.7	60	ESE			2		1		SE	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	30.09	764.2	30.25	768.4	57.6	14.2	66	N			1		0			0	0	Clear	E. Renou.
Tarbes, Normal School	29.17	740.9	30.24	768.0	60.8	16	89	SW			1		2	NW	SW	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.65	753.1	30.34	770.6	75.2	24	79	N			1		0			0	0	Clear	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.76	756.0	29.79	756.7	82.4	28										0.24	6.		L'Abbé Marchési.
Lyons			30.20	767.0			37						3			0	0		L. Jays.
Marseilles, Observatory			30.19	766.7	77.7	25.4	41	SW			1					0	0		The Staff.
Mont-Louis	25.06	636.6	30.38	771.6	60.4	15.8	75	E			3		0			0	0		M. Cave.
Nice			30.24	768.2	69.4	20.8	57	E			4		2			0	0	Slightly cl'dy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.96	761.0	29.24	763.0	56.5	13.6	63	N			2		0			0	0		Marié Davy, Director
Perpignan			30.22	767.6	68.4	20.2		E	5.6	2.50			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.75	577.9			55.0	12.8		NE			1		2			0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.50	749.2	30.24	767.7	71.8	22.1	37	SSE			2		1			0	0		The Staff.
Tours	30.01	762.2	30.21	767.2	64.2	17.9	43	E			1		3		NNW	0	0		C. Marguet.
Versailles			30.24	768.2	58.6	14.8	39	SE			1		0			0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.92	760.0	29.95	760.6	75.2	24.0	97	SE	7.4	3.3			0			0	0	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grésque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grésque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.6 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum't'l error and temperature. Inches.	Barometer. Corrected for instrum't'l error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.36	745.7	30.21	767.3	53.6	12.0	65	ESE	.....	.....	4	.....	5	W	.....	0	0	Foggy	Prof. Dr. Hoh.
Berlin	30.14	765.5	30.31	769.9	58.3	14.6	58	S	.....	.....	1	.....	8	.....	.....	0.008	0.2	.....	Prof. Arndt.
Breslau	29.62	757.5	30.36	771.2	53.2	11.8	56	NW	.....	.....	1	.....	8	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.79	756.7	30.22	767.6	57.9	14.4	62	NE	.....	.....	1	.....	9	.....	.....	Blank	Blank	.....	Albert Sens.
Cassel	29.69	754.1	30.30	769.6	55.8	13.2	63	E	.....	.....	2	.....	4	SW	.....	0	0	Foggy	Dr. H. Möhl.
Crefeld	30.10	764.5	30.26	768.6	57.7	14.3	57	SE	.....	.....	1	.....	8	.....	.....	0	0	.....	Director Lose.
Emden	30.28	769.2	30.32	770.1	57.4	14.1	64	SW	.....	.....	3	.....	5	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.92	759.9	30.28	769.2	58.1	14.5	.....	SE	.....	.....	3	.....	3	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.80	731.6	30.26	768.6	51.8	11.0	78	SW	.....	.....	2	.....	3	WSW	.....	0	0	.....	M. Wilhelm.
Hamburg	30.21	767.3	30.28	769.1	56.7	13.7	67	SW	.....	.....	4	.....	10ks	.....	.....	0.004	0.1	Fair	Captain F. Hegemann.
Kiel	30.24	768.2	30.26	768.6	55.9	13.3	67	WSW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	30.13	765.3	30.21	767.4	54.5	12.5	63	W	.....	.....	5	.....	2	.....	.....	0.091	2.3	.....	Prof. E. Luther.
Köslin	.....	.....	30.25	768.3	53.6	12.0	.....	W	.....	.....	2	.....	4	.....	.....	0.067	1.7	.....	H. Müller.
Leipsic, Observatory	29.91	759.7	30.34	770.5	57.9	14.4	51	SSE	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	30.13	765.2	30.17	766.4	54.3	12.4	59	W	.....	.....	4	.....	8cs;s	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	30.24	768.0	30.25	768.4	57.6	14.2	49	W	.....	.....	3	.....	7	.....	.....	0	0	.....	A. Lothes.
Posen	30.07	763.6	30.36	771.1	53.6	12.0	51	NW	.....	.....	0	.....	3	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.71	754.7	30.27	768.8	55.9	13.3	65	E	.....	.....	.....	.....	7	.....	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.26	743.2	30.20	767.0	59.0	15.0	55	S	.....	.....	1	.....	8	W	.....	0	0	.....	Prof. Schoder.
Treves, (Trier)	29.68	753.8	30.21	767.2	56.8	13.8	60	NW	.....	.....	1	.....	7	.....	.....	0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.75	730.2	30.25	768.4	55.0	12.8	68	SE	3.1	1.4	.....	.....	6ck	.....	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.24	768.2	30.27	768.8	54.0	12.2	79	SW	.....	.....	4	.....	7s	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.7	30.05	763.3	77.4	25.2	.....	NE	.....	.....	1.5	.....	k	.....	.....	.....	.....	.....	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deesa	29.26	742.9	29.71	754.6	93.5	34.2	43	Calm	.....	.....	.....	.....	0	.....	.....	0	0	Blue sky	.....
Bombay	29.68	753.9	29.72	754.8	85.3	29.6	81	W	5	2.2	.....	.....	10	SSW	WSW	0.03	0.8	Overcast	.....
Poona	27.73	704.4	29.74	755.4	75.4	24.1	78	SE	.....	.....	.....	.....	10	.....	SE	3.29	83.6	Overcast	.....
Lahore	28.92	734.5	29.64	752.8	91.9	33.3	38	Calm	0.9	0.4	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Belgaum	27.20	690.8	29.72	754.8	77.1	25.1	86	SW	5	2.2	.....	.....	4	E	.....	0	0	D. clouds	.....
Roorkee	28.74	730.1	29.62	752.5	86.8	30.4	59	Calm	3	1.3	.....	.....	.....	.....	.....	0	0	.....	.....
Agra	29.12	739.7	29.66	753.5	96.6	35.9	36	N	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....
Nagpur	28.65	727.8	29.68	754.0	83.9	28.8	76	Calm	2.7	1.2	.....	.....	9	.....	E	0.14	3.6	Gloomy	.....
Lucknow	29.29	744.0	29.65	753.2	86.7	30.4	64	Calm	0.2	0.1	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Allahabad	29.33	744.9	29.63	752.7	84.9	29.4	73	Calm	0.4	0.2	.....	.....	0	.....	.....	0	0	Blue sky	.....
Patna	29.48	748.8	29.66	753.3	85.0	29.4	88	Calm	0.1	0.04	.....	.....	6	E	E	.....	.....	Thunder-storm	.....
Hazaribagh	27.67	702.8	29.66	753.4	80.6	27.0	75	NW	3.5	1.6	.....	.....	3	.....	.....	0.08	2.0	Showery	.....
Cuttack	29.64	752.9	29.72	755.0	80.0	26.7	87	SSW	1.0	0.4	.....	.....	10	.....	.....	2.26	57.4	Raining	.....
Calcutta (Alipore)	29.65	753.1	29.67	753.6	83.3	28.5	89	SSE	3.0	1.3	.....	.....	2	.....	.....	0	0	D. clouds	.....
Goalpara	29.28	743.6	29.66	753.4	82.9	28.3	74	SSE	2.5	1.1	.....	.....	4	.....	.....	0	0	D; clouds	.....
Chittagong	29.64	752.8	29.73	755.1	80.9	27.2	96	Calm	1.2	0.5	.....	.....	8	.....	.....	0	0	Misty	.....
Sibsagar	29.31	744.4	29.64	752.8	83.6	28.8	83	SSE	1.5	0.7	.....	.....	10	W	W	0	0	D. clouds	.....
Jubbulpore	28.32	719.4	29.68	753.8	80.6	27.1	75	Calm	3.0	1.8	.....	.....	4	.....	.....	0	0	D. clouds	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.97	761.1	30.37	771.4	61.3	16.3	42	Calm	0	0	.....	.....	3	.....	.....	0.063	1.6	.....	Prof. Giovanni Clodig.
Padua	30.20	767.1	30.31	769.9	61.0	16.1	47	N	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	30.10	764.6	30.30	769.5	63.0	17.2	45	SE	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.97	735.7	30.27	768.9	63.3	17.4	49	SSW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.75	755.6	30.26	768.6	61.9	16.6	58	E	.....	.....	4	.....	7	N	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.37	745.9	30.27	768.8	63.0	17.2	62	NNW	3.1	1.4	.....	.....	4	SE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.35	720.1	30.24	768.2	59.4	15.2	71	NW	.....	.....	4	.....	4	W	.....	0.055	1.4	.....	Prof. D. C. Bruno.
Porto Maurizio	29.97	761.2	30.19	766.8	72.3	22.4	38	E	.....	.....	6	.....	1	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.04	763.0	30.21	767.3	70.2	21.2	53	N	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.98	761.4	30.29	769.4	65.8	18.8	42	SSE	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.97	761.1	30.22	767.5	70.3	21.3	36	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	30.05	763.3	30.13	765.4	69.6	20.9	41	ENE	16.1	7.2	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.74	729.9	30.28	769.1	56.1	13.4	48	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.97	761.2	30.14	765.6	75.2	24.0	43	N	1.8	0.8	.....	.....	1	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.96	760.9	30.15	765.9	71.6	22.0	40	NE	.....	.....	6	.....	0	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.87	758.6	30.12	765.0	68.7	20.4	61	ENE	23.7	10.6	.....	.....	3	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.91	759.8	30.10	764.6	74.8	23.8	66	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.25	743.0	30.12	765.1	73.4	23.0	73	SW	9.4	4.2	.....	.....	1	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.89	759.2	30.14	765.5	73.2	22.9	64	ENE	5.6	2.5	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.06	763.5	30.13	765.3	73.6	23.1	71	N	11.2	5.0	.....	.....	6	E	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.88	758.9	30.07	763.8	72.5	22.5	93	Calm	0	0	.....	.....	0	.....	.....	0	0	Clear	I. Arai, Director.
Tokei (Yeddo) Observatory	30.02	762.5	30.08	764.0	62.2	16.8	92	Calm	0	0	.....	0	0	.....	.....	0	0	Fair	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.5	17.5	74	N	.....	.....	5	2cs	0	.....	.....	0	0	Clear.	P. Ceballos.
Guadalajara	25.06	636.5	30.04	762.9	64.5	12.5	61	S	.....	.....	1	3	.....	NE	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.41	620.2	30.00	762.0	56.1	13.4	84	NW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.10	586.6	30.07	763.7	55.7	13.3	82	N	1.1	0.5	.....	0	10k	.....	N	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	55.4	13.0	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.50	757.0	29.81	757.3	77	25	94	WNW	.....	.....	2	0	10	.....	NW	0.493	12.5	Very cloudy	M. M. Cházaro.
San Luis Potosi	24.19	614.4	30.19	766.7	55.0	12.8	11	E	.....	.....	.....	0	2	.....	E	0	0	Hazy	G. Barroeta, M. D.
Vera-Cruz	29.88	758.8	29.91	759.5	82.4	28.0	77	NW	18.1	8.1	.....	.....	10kn	.....	NE	Inap.	Inap.	Threatening	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.4	30.01	762.2	50.4	10.2	89	NW	5.4	2.4	.....	1	0	Calm	.....	0	0	Clear	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.30	718.8	29.91	759.8	79.3	26.3	75	Calm	0	0	.....	1	4	W	SW	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.28	769.1	30.28	769.1	61.2	16.2	.....	WSW	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.21	767.3	30.26	768.7	55.2	12.9	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.20	767.0	30.20	767.0	56.1	13.4	.....	SSW	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Hellevoetsluis	30.26	768.7	30.26	768.7	60.6	15.9	71	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.28	769.9	30.28	769.1	57.6	14.2	72	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.91	759.8	29.97	761.2	48.2	9.0	68	SSE	4.9	2.2	.....	.....	8	.....	.....	0.559	14.2	Raining	
Brönö	29.84	758 0	29.88	759.0	44.2	6.8	71	WNW	9	4	.....	.....	5	.....	.....	0.10b	2.7	.....	
Christiania	29.88	759.0	30.03	762.7	51.8	11.0	47	SW	4	2	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.60	751.7	29.64	752.8	33.4	0.8	96	Calm	0	0	.....	.....	10	.....	.....	0.366	9.3	Rain & snow	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.72	754.9	29.91	759.7	66.0	20.0	83	NNW	2.5	1.1	.....	.....	2	.....	.....	1.024	26.0	.....	Dr. J. A. Sampaio.
Campo Major	29.13	740.0	30.11	764.7	84.2	29.0	34	ESE	1.3	0.6	.....	.....	6	.....	.....	0	0	Solar corona	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.97	761.1	30.05	763.3	72.7	22.6	66	SE	8.7	3.9	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.77	756.1	30.12	765.0	73.6	23.1	57	S	3.8	1.7	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.89	759.1	29.96	760.9	73.4	23.0	74	S	.....	.....	.....	.....	3	.....	.....	0.449	11.4	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—			
Bartholomew Dias					R. A. T. Pinha, Com'd.
D. Fernando					A. M. de Sande, Com'd.
India					A. D. Pedroso, Com'd.
Mindello					J. P. R. R. Bastos, Com'd't.
Quanza					A. J. de Mattos, Com'd't
Rio Douro					J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 9° 09′, E. 12° 58′	2	NW	D. clouds		F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	1	NE	Blue sky		L. Ribeiro de Costa, Com'd't.
Tejo					M. T. Guimaraes, Com'd't.

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw
Wilna
Dorpat
St. Petersburg
Kuopio
Kieff
Nikolaiev
Kertch
Moscow
Lugan
Archangel
Tiflis
Astrakhan
Krotkowo*
Kasan
Orenburg
Ekaterinburg
Nukuss
Tashkend
Barnaul
Yeniseisk
Irkutsk
Peking, (China)
Nertchinsk
Vladivostock
Nikolaievsk, on the Amoor

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.08	763.9	30.18	766.5	72.7	22.6	68	SSE	2.7	1.19	.....	.....	1k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.06	763.5	30.11	764.9	83.3	28.5	41	SE	2.6	1.16	.....	2	.....	W	.....	0	0	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.25	692.1	.....	.....	78.8	23.2	55	NE	3.2	1.42	.....	.....	.....	.....	.....	0	0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.97	710.4	30.10	764.4	81.3	27.4	44	SW	6.0	2.67	.....	1	0	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	30.09	764.2	30.23	767.9	76.5	24.7	68	SW	2.1	0.92	.....	4	5	WSW	.....	0	0	Almost cov.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.18	741.2	30.04	763.1	77.2	25.1	54	NE	1.2	0.56	.....	10	0	.....	.....	0	0	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.82	757.4	29.88	759 1	78.1	25.6	87	Calm	0	0	.....	0	2k	.....	NE	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.00	762.1	30.10	764.5	80.2	26.8	49	E	30.2	13.5	.....	5	4	NW	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.71	754.7	29.80	757.0	83.5	28.6	85	S	5.3	2.38	.....	4cs	2k	S	S	0.138	3.50	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	751.0	29.61	752.0	44.2	6.8	.....	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.71	754.5	29.76	755.8	47.5	8.6	87	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Hernosand	29.81	757.2	29.86	758.5	51.8	11.0	39	WNW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Stockholm	29.84	757.9	30.02	762.4	48.2	9.0	53	WNW	.....	.....	4	.....	2	.....	.....	Inap.	Inap.	.....	
Wisby	29.98	761.4	30.04	762.9	52.2	11.2	61	WNW	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.89	759.2	29.97	761.1	51.1	10.6	45	W	.....	.....	.....	.....	0	.....	.....	0.078	0.19	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.82	732.0	30.23	767.9	57.7	14.3	71	N	.....	.....	1	.....	3	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.61	726.8	30.25	768.4	54.3	12.4	78	W	.....	.....	1	.....	4	.....	.....	0	0	Foggy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.5 mm.; Thermometer, —0.9 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.04	762.9	65.3	18.5	77	N	16	7.0	.....	.....	7	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.4	70.2	21.2	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.79	756.7	29.91	759.6	82.0	27.8	64	NW	.....	.....	3	.....	8ks	.....	NW	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.61	752.1	29.91	759.7	64	17.8	.....	SW	8	3.6	.....	0	0	.....	.....	0.07	1.8	Clear	W. R. Bigg.
*Chatham, N. B	29.78	756.4	29.84	757.9	56	13.3	97	SW	1	0.4	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	59	15.0	94	SW	4	1.8	.....	.....	8ks	.....	SW	0	0	Clearing	H. J. Cundall, C. E.
Cornwall, Ontario	29.70	754.4	29.88	758.9	58.7	14.8	86	W	.....	.....	1	0	0	.....	.....	0.052	1.32	Clear	James Smith, M. A.
Dalhousie, N. B	29.67	753.6	29.83	757.7	52	11.1	100	Calm	.....	.....	0	.....	.....	.....	.....	0.023	5.8	Drizzling	H. A. Johnson.
Esquimault, B. C	30.25	768.3	30.30	769.6	49.3	9.6	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.79	756.7	29.81	757.2	46	7.8	99	SW	3	1.3	.....	.....	Fog	.....	Calm	0.14	3.6	Foggy	J. McWilliams.
Fredericton, N. B	29.82	757.4	29.88	758.9	54.8	12.7	89	NW	4	1.8	.....	.....	10s	.....	.....	0	0	Overcast	Prof. Harrison.
*Fort Garry Manitoba	29.10	739.1	29.93	760.2	42	5.6	100	NW	4	1.8	.....	2k	5ks	NW	NW	0.100	2.54	Fair	James Stewart.
Granton, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Grant.
*Halifax, N. S	29.86	758.0	29.96	761.0	63	11.7	93	S	.....	.....	1	1c	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.73	755.1	29.86	758.4	67	13.9	99	S	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	Geo. Dickson, M. A.
Heart's Content, N. F	29.62	752.3	29.98	761.5	60.7	15.9	76	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	E. Weedon.
*Kingston, Ontario	29.92	760.0	29.95	760.7	47	8.3	85	NE	.....	.....	2	.....	10	.....	.....	0.02	0.5	Overcast	S. Woods, M. A.
Little Glace Bay, N. S	29.61	752.1	29.94	760.5	61	16.1	81	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.91	759.7	29.95	760.7	53.0	11.7	87	S	8	3.6	.....	.....	10n	.....	.....	0.11	2.8	Misting	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.69	754.1	29.80	759.2	58	14.4	73	W	14	6.3	.....	0	2s	.....	.....	0.13	3.3	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.21	741.9	29.99	759.4	48	8.9	96	NE	2	0.9	.....	0	0	.....	.....	0.05	1.3	Clear	J. F. Jeffers, B. A.
Port Dover, Ontario	29.18	741.2	29.93	760.2	62.7	11.5	93	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	H. Morgan.
Port Hastings, N. S	29.29	744.0	29.97	761.7	61	16.1	88	SW	6	2.7	.....	0	0	.....	.....	0.06	1.5	Clear	Peter Grant.
Port Stanley, Ontario	29.84	757.9	29.89	759.2	58.3	14.6	.....	SE	6	2.7	.....	.....	.....	.....	.....	0	0	Foggy	M. Payne.
*Quebec, Quebec	29.35	745.5	29.98	761.5	60	15.6	72	W	12	5.4	.....	5k	0	W	.....	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.67	761.1	29.80	759.2	56	13.3	81	W	.....	.....	1	0	0	.....	.....	0.01	0.3	Clear	W. H. McIntyre.
St. Andrews, N. B	29.43	747.5	29.89	759.2	47	8.3	96	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	Dr. Gove.
St. John, N. B	29.81	757.2	29.86	758.4	55	12.8	99	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.71	754.6	29.87	758.7	56	13.3	100	S	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	K. Stewart.
Stayner, Ontario	29.20	741.7	29.90	759.4	60	15.6	81	W	15	6.7	.....	2c	0	W	.....	0	0	Clear	R. J. Oole.
Stratford, Ontario	29.12	739.6	29.88	758.9	60	15.6	79	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A
*Sydney, C. B	29.69	728.7	29.96	761.0	52.2	11.2	90	SW	8	3.6	.....	2c	0	W	.....	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.93	760.2	29.96	761.0	63	11.7	96	SE	7	3.1	.....	.....	10n	.....	SE	0.04	1.0	Light rain	Magnetic Observatory.
Windsor, N. S	29.58	751.3	29.96	761.0	55	12.8	87	W	2	0.9	.....	0	0	.....	.....	0.01	0.3	Clear	Prof. John E. Orman.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	92	NW	.....	.....	.....	5k	5s	.....	.....	0.02	0.5	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.79	756.7	30.01	762.2	56	13.3	87	Calm	0	0	.....	0	Sm'e	.....	.....	0.09	2.3	Clear	
Alpena, Michigan	29.25	742.9	29.89	759.2	48	8.9	85	Calm	0	0	.....	2k	Fog	Calm	.....	0	0	Fair	
Atlantic City, New Jersey	29.99	761.7	30.01	762.2	67	19.4	90	W	6	2.7	.....	10k	0	W	.....	0	0	Cloudy	
Augusta, Georgia	29.84	757.9	30.02	762.5	64	17.8	89	Calm	0	0	.....	0	Haze	.....	.....	0	0	Hazy	
Baltimore, Maryland	30.00	762.0	30.05	763.3	66	18.9	74	N	8	3.6	.....	2ck	2s	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.00	762.0	30.02	762.5	67	19.4	79	N	13	5.8	.....	2k	8s	NW	NW	0	0	Cloudy	
Bismarck, Dakota	28.29	718.6	30.15	765.8	45	7.2	76	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Boerne, Texas	28.59	726.2	.....	.....	71	21.7	71	Calm	0	0	.....	7k	0	S	.....	0	0	Cloudy	
Boise City, Idaho	27.40	696.0	30.36	771.1	36	2.2	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.83	757.7	29.98	761.5	63	17.2	62	NW	12	5.4	.....	1cs	Haze	NW	Calm	0	0	Clear	
Brackettville, Texas	28.88	733.5	29.87	758.7	74	23 3	91	E	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	29.02	737.1	30.04	763.0	37	2.8	100	W	10	4.5	.....	0	0	.....	.....	0.01	0.3	Clear	
Brownsville, Texas	29.89	759.2	29.95	760.7	72	22.2	95	N	1	0.4	.....	2k	0	SE	.....	0	0	Clear	
Buffalo, New York	29.28	743.7	29.96	761.0	62	16.7	67	SW	9	4.0	.....	0	0	.....	.....	Inap.	Inap	Clear	
Burkes, Arizona	.....	.....	.....	.....	65	18.3	49	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.74	755.4	30.00	762.0	59	15.0	76	S	5	2.2	.....	0	Haze	.....	Calm	0.08	2.0	Clear	
Cairo, Illinois	29.68	753.9	30.08	764.0	58	14.4	94	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Camp Apache, Arizona	.....	.....	.....	.....	46	7.8	54	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.18	639.0	29.98	761.5	67	19.4	21	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	50	10.0	52	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camilo, California	27.36	694.9	29.93	760.2	40	4.4	56	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.95	760.7	29.96	761.0	71	21.7	85	NE	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	29.93	761.5	30.00	762.0	69	20.6	80	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	29.94	760.5	29.96	761.0	70	21.1	85	NE	22	9.8	.....	2k	0	NE	.....	0	0	Fair	
Cape May, New Jersey	30.00	762.0	30.03	762.7	68	20.0	84	NW	4	1.8	.....	5cs	Haze	SW	.....	0	0	Fair	
Castroville, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Charleston, South Carolina	29.95	761.7	30.01	762.2	69	20.6	90	N	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	27	— 2.8	64	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.33	745.0	30.02	762.5	55	12.8	62	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.52	749.8	30.17	766.3	55	12.8	84	SE	3	1.3	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Cleveland, Ohio	29.34	745.2	30.05	763.3	61	16.1	50	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.21	716.5	29.83	757.7	66	18.9	89	SW	4	1.8	.....	2c	0	Calm	.....	0	0	Fair	
Columbus, Ohio	29.29	744.0	30.13	765.3	51	10.6	78	S	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Conchо, Texas	28.10	713.7	29.71	754.6	68	20.0	74	SE	1	0.4	.....	5c	0	S	.....	0	0	Fair	
Corsicana, Texas	29.57	751 1	30.03	762.7	70	21.1	90	E	3	1.3	.....	2ck	0	Calm	.....	2.09	53.1	Clear	
Davenport, Iowa	29.50	749.3	30.14	765.5	53	11.7	86	W	4	1.8	.....	Haze	7s	Calm	W	0	0	Cloudy	
Decatur, Texas	28.86	733 0	29.99	761.7	68	20.0	90	E	10	4.5	.....	.....	Fog	.....	Calm	0	0	Foggy	
Denison, Texas	29.25	742.9	30.03	762.7	69	20.6	90	E	5	2.2	.....	.....	10s	.....	E	Inap	Inap.	Cloudy	
Denver, Colorado	24.99	634.7	30.21	767.3	40	4.4	39	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.24	742.7	30.13	765.3	50	10.0	79	Calm	0	0	.....	0	8s	.....	W	0	0	Fair	
Detroit, Michigan	29.32	744.7	29.97	761.2	57	13.9	69	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.37	695.2	29.57	751.1	65	18.3	94	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Dubuque, Iowa	29.38	746.2	30.08	764.0	51	10.8	59	NW	6	2.7	.....	10k	Fog	NW	Calm	0	0	Cloudy	
Duluth, Minnesota	29.24	742.7	29.91	759.7	46	7.8	92	Calm	0	0	.....	0	0	.....	.....	0.06	1.5	Clear	
Eagle Pass, Texas	29.26	743.2	29.98	761.5	72	22.2	95	E	8	3.6	.....	.....	10ks	.....	SE	0	0	Cloudy	
Eastport, Maine	29.80	756.9	29.86	758.4	54	12.2	100	NW	4	1.8	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Edinburg, Texas	.....	.....	.....	.....	72	22 2	85	Calm	.....	.....	0	.....	Fog	.....	Calm	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	70	21.1	49	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Erie, Pennsylvania	29.30	744.2	30.00	762.0	62	16.7	56	SW	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Escanaba, Michigan	29.25	742.9	29.90	759.4	49	9.4	85	W	7	3.1	.....	5k	0	W	.....	0.16	4.1	Fair	
Florence, Arizona	28.49	723.6	30.09	764.3	60	15.6	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.57	649.5	29.63	752.6	48	8.9	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.24	641.1	30.20	767.1	64	17.8	52	Calm	0	0	.....	5c	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.53	750.0	30.05	763.3	67	19.4	60	E	6	2.7	.....	5k	Haze	SE	Calm	0	0	Fair	
Fort Griffin, Texas	28.72	729.5	29.95	760.7	67	19.4	84	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Fort McKavett, Texas	27.80	706.1	29.66	753.4	70	21.1	75	S	3	1.3	.....	2cs	0	NE	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.78	731.0	29.85	758.2	68	20.0	84	SE	8	3.6	.....	0	2s	.....	SE	0	0	Fair	
Fredericksburg, Texas	28.18	718.3	29.77	756.1	76	24 4	73	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Galveston, Texas	29.96	761.0	30.00	762.0	79	26.1	87	E	5	2.2	.....	5k	0	E	.....	0	0	Fair	
Graham, Texas	28.92	734.6	29.92	760.0	74	23.8	81	Calm	0	0	.....	8cs	0	Calm	.....	0	0	Fair	
Grand Haven, Michigan	29.31	745.2	29.97	761.2	63	17.2	62	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.34	745.2	30.11	764.8	56	13.3	75	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
Indianola, Texas	29.96	761.0	29.99	761.7	80	26.7	87	E	12	5.4	.....	2k	0	SE	.....	0	0	Fair	
Jacksboro, Texas	28.82	732.0	29.91	759.7	70	21.1	85	SE	4	1.8	.....	2cs	0	S	.....	0	0	Clear	
Jacksonville, Florida	29.95	760.7	29.97	761.2	70	21.1	85	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.45	748.0	30.06	763.5	55	12.8	87	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Key West, Florida	29.86	758.4	29.89	759.2	80	26.7	74	N	16	7.2	.....	8cs;k	0	alm;NE	.....	0.03	0.8	Fair	
Kittyhawk, North Carolina	29.97	761.2	29.98	761.7	71	21.7	80	NE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.11	739.4	30.09	764.3	63	17.2	89	NE	1	0.4	.....	.....	0	E	.....	0.10	2.5	Clear	
La Crosse, Wisconsin	29.29	744.0	30.02	762.5	51	10.6	79	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	28.06	661.9	30.22	767.6	50	10.0	58	NE	2	0.9	.....	5c	0	NW	.....	0	0	Fair	
Laredo, Texas	29.53	750.0	29.86	758.4	77	25.0	82	E	6	2.7	.....	5k	0	S	.....	0	0	Fair	
Lead City, Dakota	24.99	634.7	30.26	768.6	33	0.6	70	SW	2	0.9	.....	5ck	Haze	W	Calm	0	0	Fair	
Leavenworth, Kansas	29.21	741.9	30.05	763.3	53	11.7	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.52	749.8	29.85	758.2	54	12.2	87	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Louisville, Kentucky	29.57	751.1	30.13	765.3	55	12 8	81	N	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Lynchburg, Virginia	29.40	746.7	30.07	763.8	68	20.0	84	Calm	0	0	.....	0	8ks	.....	Calm	0	0	Cloudy	
Madison, Wisconsin	29.05	737 9	30.03	762.7	51	10.6	72	W	2	0.9	.....	5ck	1s	W	W	0	0	Fair	
Marquette, Michigan	29.16	740.7	29.85	758.2	52	11.1	79	SW	12	5.4	.....	5k	1s	S	Calm	0.21	5.3	Fair	
Mason, Texas	28.38	720.0	30.09	764.3	68	20.0	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.80	756.9	30.12	765.0	62	16.7	88	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.27	743.4	29.99	761.7	54	12.2	61	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Mobile, Alabama	29.97	761.2	30.01	762.2	72.5	22.5	87	N	4	1.8	.....	5k	5s	NE	NE	0	0	Cloudy	
Montgomery, Alabama	29.79	756.7	30.01	762.2	73	22 8	85	N	3	1.3	.....	8k	0	Calm	.....	0	0	Fair	
Morgantown, West Virginia	29.09	738.9	30.13	765.3	62	16.7	83	SW	2	0.9	.....	0	5ks	.....	SW	0	0	Fair	
Mt. Washington, N. H.	23.79	604.3	30.15	765.8	35	1.7	80	NW	44	19.7	.....	0	0	.....	.....	0	0	Clear	
Nashville, Tennessee	29.60	751.8	30.13	765.3	57	13.9	87	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.91	759.7	30.03	762.7	65	18.3	68	NE	8	3.6	.....	2ck	0	Calm	.....	0	0	Clear	
New London, Connecticut	29.96	761.0	30.01	762.2	64	17.8	68	N	4	1.8	.....	2ck	2s	SW	W	0	0	Fair	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	76	24.4	91	W	4	1.8	.....	1ck	0	N	.....	0	0	Clear	
Newport, Rhode Island	29.93	760.2	29.98	761.5	65	18.3	73	NW	6	2.7	.....	4k	2ks	W	W	0	0	Fair	
New York, New York	29.87	758.7	30.04	763.0	65	18.3	73	NW	10	4.5	.....	1ck	2s	SW	Calm	Inap.	Inap.	Fair	
Norfolk, Virginia	29.97	761.2	30.02	762.5	67	19.4	89	NE	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
North Platte, Nebraska	27.26	692.4	29.88	758.9	42	5.6	60	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.30	769.6	30.34	770.6	40	4.4	82	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	
Omaha, Nebraska	29.02	737.1	30.10	764.5	51	10.6	79	Calm	0	0	.....	2c	0	W	.....	0	0	Clear	
Oswego, New York	29.67	753.6	29.99	761.7	57	13.9	81	S	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Pembina, Dakota	29.11	739.4	29.93	760.7	37	2.8	100	W	8	3.6	.....	0	2s	.....	Ca'm	0.02	0.5	Clear	
Philadelphia, Pa	30.02	762.5	30.07	763.8	67	19.4	69	N	12	5.4	.....	0	5ks;s	.....	NW	0.01	0.3	Fair	
Phœnix, Arizona	28.71	729.2	.....	.....	91	16.1	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.93	454.7	30.14	765.5	26	— 3.3	52	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.17	613.9	29.94	760.5	47.5	8.6	41	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	50	10.0	93	E	2	0.9	.....	0	Fog	.....	Calm	0.01	0.3	Clear	
Port Huron, Michigan	29.29	744.0	29.94	760.5	55	12.8	74	SW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.69	750.2	29.94	760.5	61	16.1	77	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.24	768.1	30.35	770.9	47	8.3	92	N	5	2.2	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Prescott, Arizona	24.81	630.2	30.17	766.3	42	5.6	66	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.27	743.4	30.07	763.8	70	21.1	95	SE	3	1.3	.....	2k	0	S	.....	0	0	Fair	
Punta Rassa, Florida	29.92	760.0	29.94	760.5	74	23.3	81	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.55	750.6	29.80	756.4	66	18.9	28	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.82	757.4	30.03	762.7	74	23.3	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.36	745.7	29.96	761.0	57	13.9	69	SW	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Roseburg, Oregon	29.68	753.9	30.28	769.1	38.5	3.6	96	N	1	0.4	.....	0	1s	.....	Calm	0	0	Clear	
Sacramento, California	29.80	756.9	29.88	758.9	71	10.6	79	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.61	749.5	30.08	764.0	60	15.6	82	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	
St. Marks, Florida	29.98	761.5	30.00	762.0	67	19.4	95	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.14	740.1	29.96	761.0	46	7.8	76	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	45.5	7.5	58	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.31	744.5	29.88	758.9	73	22.8	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.81	757.2	29.88	758.9	61	16.1	100	NW	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.38	746.2	30.04	763.0	61	16.1	61	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.00	762.0	30.03	762.7	65	18.3	78	N	16	7.2	.....	8k	0	NW	.....	0	0	Cloudy	
San Francisco, California	29.82	757.4	29.88	758.9	58	14.4	82	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	47	8.3	34	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.90	759.4	29.99	761.7	70	21.1	95	N	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	67	19.4	84	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.24	615.7	.....	.....	52	11.1	63	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.95	760.7	29.99	761.7	65	18.3	80	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.91	759.7	30.04	763.0	62	16.7	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.97	685.0	29.97	761.2	64	17.8	52	SE	5	2.2	.....	1k	0	Calm	.....	0	0	Fair	
Thatcher's Island, Mass	29.92	760.0	29.97	761.2	62	16.7	72	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.35	745.5	30.01	762.2	60	15.6	65	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	65	18.3	52	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	71	21.7	90	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.95	760.7	.....	.....	40	4.4	82	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	31	— 0.6	100	S	.....	.....	1	.....	10s	.....	S	0.05	1.3	Cloudy	
Uvalde, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vicksburg, Mississippi	29.83	757.7	30.09	764.3	69	20.6	84	NE	4	1.8	.....	5k	0	NE	.....	0.63	16.0	Fair	
Virginia City, Montana	24.45	621.0	29.93	760.2	33	0.6	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.56	750.8	29.92	760.0	63	17.7	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.95	760.7	30.06	763.5	67	19.4	79	NW	8	3.6	.....	2k	0	Calm	.....	Inap.	Inap.	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	58	14.4	42	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.90	759.4	29.98	761.5	64	17.8	88	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	39	3.9	55	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.93	760.2	29.98	761.5	65	18.3	73	NW	8	3.6	.....	.....	10ks	.....	NW	0	0	Cloudy	
Yankton, Dakota	28.88	733.5	30.18	766.6	48	8.9	63	SW	4	1.8	.....	0	8s	.....	W	0	0	Cloudy	
Yuma, Arizona	29.64	752.8	29.80	756.9	64	17.8	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.73	755.1	29.78	756.4	25.5	— 3.6	94	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.87	758.7	29.89	759.2	82	27.8	74	Calm	0	0	.....	8k	0	NE	.....	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.76	755.9	29.79	756.7	80	26.7	82	NE	.....	.....	1	0	2k	.....	.....	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	83	S	4	1.8	.....	2c	8ks	E	.....	0	0	Hazy	G. O. Gellich.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	81	27.2	87	Calm	0	0	.....	8cf	8n	Calm	NW	0.20	5.1	.....	James Gall.
Navassa, W. I.	29.71	754.6	29.79	756.7	80.5	26.9	.....	N	3.8	1.7	.....	.....	.....	.....	.....	0.58	14 7	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	85	29.4	68	NE	.....	.....	2	4c	5k	NE	.....	0	0	Clear?	C. J. Hering
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	67.0	19.4	82	Calm	0	0	.....	0	3ks	.....	.....	0.05	1.3	.....	Thomas Herrán
Portland, Jamaica, W. I.	29.92	752.3	29.94	760.5	75	23.9	90	S	.....	.....	1	c	.....	.....	.....	.....	.....	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Bismarck is 1,706 feet, or 520 meters; Boerne, 1,383 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Prackettville, 1,076 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m.; Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.8 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,560 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,178 ft., or 359.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.97 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.664 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.96 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.86 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.14	765.5	74.5	23.6	74.5	23.6	95	N	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	29.96‡	760.7‡	.....	.....	62	16.7	41	W	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.08*	764.0*	71.5	21.9	67.2	19.6	87	Calm	.....	.....	0	.....	1c;sm'e	.....	Calm	0	0	.....	.....	Fair.....	
Adams, S. 44° 52', W. 103° 23'.....	29.32	744.7	56	13.3	47	8.3	85	WSW	.....	.....	4–5	.....	5	.....	WSW	Blank	Blank	Rough	WSW	Cloudy	
Alaska, Valparaiso, Chili.....	30.22	767.6	60	15.6	55	12.8	87	NNW	.....	.....	1	.....	10	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance, N. 37° 09', E. 18° 58'.....	30.06‡	763.5‡	.....	.....	74	23.3	68	NNE	.....	.....	4	.....	5	.....	NNE	.....	.....	Light	N;E	Pleasant.....	
Ashuelot. Yokohama, Japan	30.16	766.1	74	23.3	70	21.1	60	WSW	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	Clear	
Canonicus, New Orleans, La.....	30.04	763.0	54	12.2	74	23.3	68	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	30.04‡	763.0‡	.....	.....	67	19.4	69	NNW	9	4.0	.....	.....	5	.....	WSW	0	0	.....	.....	Foggy	
Constitution, Havre, France.....	.....	.....	.....	.....	60	15.6	82	E	.....	.....	2	.....	4	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Despatch, Volo, Turkey.....	30.04‡	763.0‡	.....	.....	77	25.0	58	SSE	.....	.....	2	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Essex, S. 32° 38', W. 33° 50	30.24	768.1	64	17.8	63	17.2	83	NE	.....	.....	6	.....	8	.....	NE	.....	.....	Mod'ate	E	Fair	
Franklin, Norfolk, Va.....	30.09	764.3	70	21.1	68	20.0	95	NNW	6	2.7	.....	.....	1	.....	Calm	0	0	.....	.....	Clear.....	
Gettysburg N. 37° 12', E. 11° 22' 54"...	30.05‡	763.3‡	.....	.....	82	27.8	83	ENE	.....	.....	1	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Guard, S. 13° 42', W. 38° 07'.....	30.07	763.8	77	25.0	77	25.0	82	ENE	.....	.....	2	.....	8	.....	ENE	.....	.....	Smooth	.....	Misty.....	
Hartford, Rio de Janeiro, Brazil ...	29.97	761.2	.....	.....	78	25.6	69	NNW	1.2	0.5	.....	.....	5	.....	.....	0	0	.....	.....	Fair.....	
Marion, N. 38° 41', E. 17° 22'.....	30.14	765.5	73	22.8	73	22.8	72	NNE	.....	.....	6	.....	2	.....	NNE	0	0	Mod'ate	NNE	Fair.....	
Michigan, Erie, Pa.....	29.96†	761.0†	.....	.....	61	16.1	77	SSW	.....	.....	5	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy. Yokohama, Japan	30.08‡	764.0‡	.....	.....	70	21.1	75	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear...	
New Hampshire, Port Royal, S. C.....	30.15	765.8	74	23.3	72	22.2	90	N	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.11†	764.8†	.....	.....	62	16.7	83	S	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.34	770.6	58	14.4	47	8.3	85	NE	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....	Raining	
Passaic, Washington, D. C.....	.....	.....	.....	.....	69	20.6	95	NW	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Plymouth. Portland, Maine.....	30.01	762.2	61	16.1	61	16.1	77	NW	.....	.....	0–1	.....	.....	.....	.....	.....	.....	.....	.....	Light mist...	
Powhatan, Portsmouth, N. H.....	29.97‡	761.2‡	.....	.....	62	16.7	77	WNW	4.8	2.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear.	
Ranger. Hong-Kong, China	30.07	763.8	84	28.9	82	27.8	91	E	.....	.....	3–4	.....	2	.....	E	.....	.....	.....	.....	Rainy	
Rio Bravo, Brownsville, Texas.....	29.92	760.0	75	23.9	75	23.9	95	NNE	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	29.98‡	761.5‡	.....	.....	69	20.6	85	N	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Saratoga, Philadelphia, Pa.....	29.97	761.2	.....	.....	69	20.6	90	N	.....	.....	3	.....	8	.....	N	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa.....	29.99	761.7	69	20.6	68	20.0	74	NNE	4	1.8	.....	.....	8	.....	SW	0.01	0.3	.....	.....	Cloudy.....	
Supply, Havre, France.....	30.28	769.1	59	15.0	61	16.1	66	SE	.....	.....	0–1	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.....	29.99‡	761.7‡	.....	.....	64	17.8	73	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Trenton, N. 41° 54', W. 13° 00'.....	30.06‡	763.5‡	.....	.....	68	20.0	90	S	.....	.....	3	.....	8	.....	S	0	0	Smooth	.....	Cloudy.....	
Tuscarora, Pichilinque, Mexico.....	29.68	753.9	82	27.8	82	27.8	71	S	.....	.....	2–3	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Vandalia, Cartagena, Spain.....	30.18‡	766.6‡	.....	.....	74	23.3	81	NE	.....	.....	1	.....	8	.....	NE	.....	.....	.....	.....	Cloudy.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	65	18.3	73	NW	7	3.1	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			
S. S. City of Panama, N. 39° 40′, W. 124° 35′		29.99*	761.7*				NW			2		5		W		Mod'ate	NW	Clear	Capt. Seabury.
S. S. City of Peking, N. 36° 30′, W. 131° 38′		30.25†	768.3†	60	15.6	94	NNE			5		4		NW		Mod'ate	N	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, Punta Arenas, Costa Rica		29.90†	759.4†	78	25.6	100	Calm			0		9		NW	Blank			Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 43° 00′, W. 124° 50′		30.31†	769.9†	50	10.0	93	NNE			1		4		NE	0	Mod'ate	WNW	Foggy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.
WHITE STAR LINE MARINE SERIES.																			
Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic, N. 41° 49′, W. 154° 34′		29.83*	757.7*	64	17.8	83	SE			8		n		S		Mod'ate	SE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 36° 26′, E. 157° 13′		30.10	764.5	70	21.1	44	ESE			5		4		E		4	NE	D. clouds	Capt. John Metcalf.
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 47° 41′, W. 42° 21′		29.29	744.0	55	12.8	84	NW			6		5		NW	5 hours	5	NNW	Squally	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		CHARACTER.	DIRECTION FROM—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					

AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

S. S. Illinois																			Captain Shackelford.
S. S. Indiana, Kinsale, Ireland		30.15*	765.8*	58	14.4	94	SW			2		5		S	0	Smooth		Clearing	Captain Sargent.
S. S. Ohio, Delaware River		30.03	762.7	71	21.7	80	N			1		7		N	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 50′ W. 11° 30′		29.94*	760.5*				S	30	13.4			10		SSE		Mod'ate	S	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 16° 37′, W. 64° 38′		29.60	756.9	86	30.0	68	SSE	6	2.7		5ck	2ks	W	SE	0.06 in or 2.0 mm.	Smooth		Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 4, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador								E											Dr. Ollive.
Nemours			30.13	765.2	77.7	25.4	70				3		2			0	0	Fair	Kesxuche.
Algiers			30.13	765.3	77.0	25.0	80	NNE			1		2			0	0	Fair	Tourillere.
La Calle			30.20	767.0	80.2	26.8	77	NNE			1		3			0	0	Pretty fair	Foufrede.
Tunis			30.17	766.3	82.4	28.0	59	W			6		5			0	0	Cloudy	Jacques.
Sfax			30.24	768.0	80.6	27.0		NNE			5		5			0	0	Cloudy.	Gau.
Saida			30.12	765.1	80.2	26.8	21	N			1		3			0	0	Pretty fair	Herbin.
Tebessa			30.14	765.5	75.2	24.0	46	E			3		4			Blank	Blank	Cloudy	Watrin.
Geriville			30.11	764.8	70.2	21.2	86	SE			5		4			0	0	Cloudy	Brugniaux.
Laghouat			30.28	769.1	71.6	22.0	55	SSW			1		2			0	0	Fair	Bertrand.
Biskra			30.21	767.2	86.0	30.0	36	ESE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.083? m.,or 3,569.4?ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.73	755.2	30.28	769.2	57.7	14.3	66				1		1			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.52	749.8	30.29	769.4	55.8	13.2	66	E			2		10			0	0		Dr. Wierzbiski
Eperies	29.36	745.4	30.23	767.9	54.3	12.4	60	Calm			0		5cs			0	0		Julius Mikolik.
Gratz	29.00	736.6	30.25	768.4	56.5	13.6	82	S			3		0			0	0		Andreas Rospini.
Hermannstadt	28.70	728.9	30.21	767.3	47.5	8.6	83	NW			1		10			0.466	11.8		Prof. A. Gottschling.
Kremsmünster	28.87	733.3	30.22	767.5	54.3	12.4	77	Calm			0		2			0	0		Prof. C. Wagner
Lemberg	29.24	742.7	30.24	768.0	52.2	11.2	94	SE			1		8			0	0		Dr. T. Stanecki.
Pola	30.11	764.8	30.22	767.6	63.9	17.7	57	WNW			4		0			0	0		I.R.Hydrographic Office
Szathmar	29.79	756.7	30.26	768.5	57.4	14.1	57	N			1		8			0	0		Julius Csics, S. J.
Szegedin	29.98	761.4	30.26	768.5	56.8	13.8	60	N			1		0			0	0		Karl Stancel.
Trieste	30.15	765.8	30.25	768.4	63.7	17.6	68	W			1		0			0	0	Clear	P. Busin.
Vienna	29.55	750.6	30.27	768.9	54.7	12.6	63	Calm			0		3			0	0		I. R. Central Met. Ob'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	30.01	762.3	30.21	767.4	58.5	14.7	61	E			1	1		NW		0	0		Royal Observatory
Furnes	30.21	767.4	30.24	768.0	63.7	17.6	66	SSW			1		5			0	0		M. E. de Cae.
Maeseyck	30.13	765.2	30.26	768.5	57.0	13.9	66	WSW			0		0			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.03	762 7	30.13	765.3	50.2	10.1	.....	SE	11	4.9	.....	.....	9	.....	.....	0.100	2.54	Overcast.....	W. Boswell.
Ardrossan	29.98	761.5	29.99	761.7	59	15.0	.....	ESE	.....	.....	2	.....	8	.....	.....	.....	.....	Misty.....	George Carrick.
Armagh, Observatory	.....	.....	29.96	761.0	61.2	16.2	.....	S	12	5.4	.....	.....	9	.....	.....	.....	.....	Overcast.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.05	763.3	58.6	14.8	.....	SE	11	4.9	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.68	753.9	30.08	764.0	58.8	14.9	.....	W	.....	.....	1	.....	10	.....	.....	0	0	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.94	760.5	29.97	761.2	84	28.9	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.12	765.0	67.0	19.4	.....	SSW	.....	.....	1	.....	4	.....	.....	.....	.....	Hazy	H.Todd. [H. C.
Cardington	.....	.....	30.15	765.8	64.0	17.8	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	30.04	763.0	30.17	766.3	62.2	16.8	.....	SW	.....	.....	3	.....	4	.....	.....	.....	.....	Blue sky.....	Lt. G. W. Morris, R. E.
Dartmoor	28.63	727.2	30.10	764.5	57.0	13.9	.....	S	.....	.....	2	.....	9	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	29.94	760.5	29.97	761.2	56	13.3	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast.....	J. Mac Gowan.
Dover	30.15	765.8	30.18	766.6	59	15.0	.....	SW	.....	.....	2	.....	2	.....	.....	.....	.....	¼ clouded...	J. Costello.
Falmouth, Observatory	29.89	759.2	30.12	765.0	61.0	16.1	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.45	697.2	29.77	756.1	81.2	27.3	.....	E	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	Pvt. G.Salmon, A.H. C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	84	28.9	.....	SW	.....	.....	2	.....	4	.....	.....	.....	.....	Drizzling.....	
Galway, Queen's College	.....	.....	29.90	759.4	64	17.8	.....	SW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8	.....	.....	.....	E	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.82	757.4	30.03	762.7	53.1	11.7	.....	NE	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy.....	D. G. Maclean.
Great Yarmouth	30.15	765.8	30.16	766.1	60	15.6	.....	SSE	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.98	761.5	30.15	765.8	65.1	18.4	.....	SSW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.91	759.7	30.13	765.3	63.5	17.5	.....	SSW	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.16	766.1	64	17.8	.....	SW	.....	.....	2	.....	6k	.....	.....	0	0	Gloomy.....	M. P. Moyle.
Holyhead	29.98	761.5	30.03	762.7	60	15.6	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Misty.....	John Tilston.
Jersey	29.89	759.2	30.18	766.6	63.0	17.2	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	Gloomy.....	J. Fisher.
Kew, Observatory	30.12	765.0	30.15	765.8	62.7	17.1	.....	S	10	4.5	.....	.....	7k	.....	.....	.....	.....	Hazy.....	The Staff.
Kingstown	29.95	760.7	29.98	761.5	64	17.8	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	30.11	764.8	61.5	16.4	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.08	764.0	30.15	765.8	75	23.9	.....	E	.....	.....	1	.....	8ks	.....	.....	.....	.....	Overcast.....	Sergt. Beckett.
Nairn	29.96	761.0	30.05	763.3	51	10.6	.....	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.81	757.2	83.0	28.3	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.96	761.0	30.15	765.8	62.3	16.8	.....	S	.....	.....	2	.....	10k	.....	W	0.048	1.22	Overcast.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.58	751.3	30.10	764.5	60.7	15.9	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.13	765.3	63	17.2	.....	S	.....	.....	1	.....	9	.....	.....	.....	.....	Threatening	H.E. Bellamy.
Plymouth	30.04	763.0	30.12	765.0	62.6	17.0	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast.....	John Merrifield.
Roche's Point	29.94	760.5	29.98	761.5	61	16.1	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Dull.....	W. Kennedy.
Saint Ann's Head	29.90	759.4	30.06	763.5	59	15.0	.....	SSW	.....	.....	3	.....	10	.....	.....	.....	.....	Foggy.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	30.14	765.5	49	9.4	.....	E	15	6.7	.....	.....	10	.....	.....	.....	.....	.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.11	764.8	62.6	17.0	.....	NE	.....	.....	2	.....	9	.....	.....	.....	.....	D. clouds.....	Sergt. W. H. Lyne.
Sheffield	29.83	757.7	30.11	764.8	60.3	15.7	.....	SW	.....	.....	2	.....	10	.....	.....	0.04	1.0	Overcast.....	W. F. Cooper.
Silloth, Rectory	30.00	762.0	30.03	762.7	61.2	16.2	.....	Calm	.....	.....	0	.....	7	.....	.....	0.120	3.05	D. clouds.....	C. Edith Redford.
Stonyhurst, Observatory	29.68	753.9	30.08	764.0	55.5	13.1	76	S	.....	.....	1	.....	10	.....	.....	.....	.....	Misty.....	Rev. S. J. Perry.
Stornoway, Lewis C. (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.94	760.5	30.16	766.1	65.3	18.5	.....	S	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Griffith, F.M.S
Thurso	30.05	763.3	30.11	764.8	52	11.1	.....	SE	.....	.....	2	.....	9	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	30.11	764.8	64	17.8	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	W. Newcombe.
Valencia, Observatory	29.91	759.7	29.93	760.2	63.1	17.3	.....	SSE	18	8.0	.....	.....	7	.....	.....	.....	.....	D. clouds.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.84	757.9	51.0	10.6	76	NW	.....	.....	3	.....	10kn	.....	.....	0	0	Covered.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.0	72.8	22.7	62	ESE	14.0	6.3	.....	5	4	.....	SE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.21	767.3	30.30	769.6	51.0	10.6	80	Calm	0	0	.....	.....	*0	.....	.....	0	0	Heavy dew..	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria	.....	.....	.....	Capt. W. Watson.
Brig Catherine. N. 38° 55', W. 74° 10'	4	.....	Blue sky.....	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle,	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 19° 21', W. 51° 10'	.....	NW	D. clouds.....	Capt. D. W. A. Quaile
S. S. Peruvian	.....	.....	.....	Capt. W. H. Smith, R. N. [R.
Schooner Traveller, N. 49° 50', W 17° 30'	4	SSW;SSE	Overcast.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.
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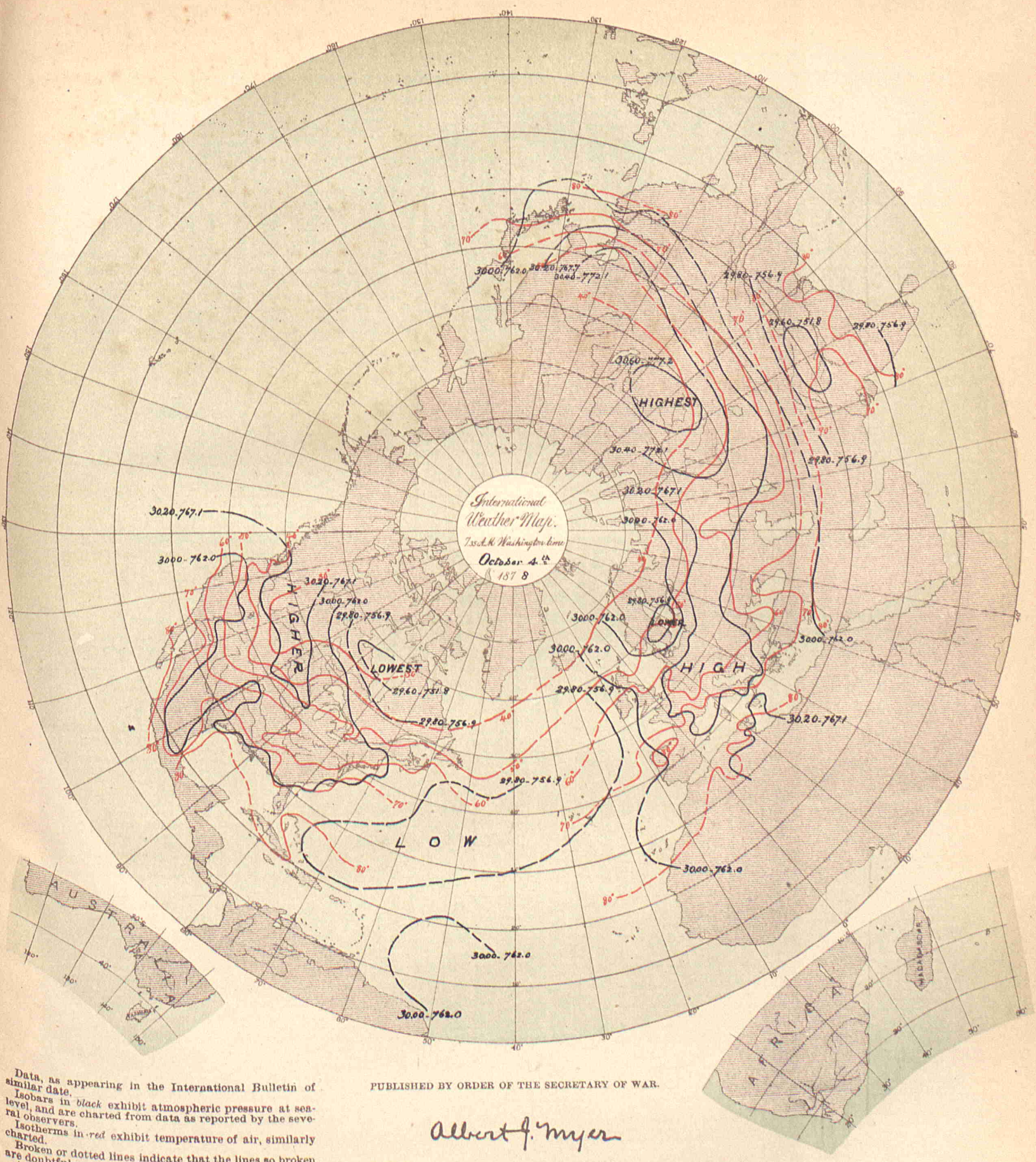
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; eather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.20	665.5	29.92	760.0	66.6	19.2	92	SE	.....	.....	1	3c	.....	.....	.....	0.3	7.6	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.96	761.0	30.01	762.2	52.5	11.4	93	NW	.....	.....	4	.....	10	.....	.....	.....	.....	.....
Fanöe	30.07	763.6	30.08	764.1	54.0	12.2	74	NW	.....	.....	4	.....	5	.....	.....	.....	.....	Raining
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.15	765.8	30.19	766.7	42.6	5.9	74	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	.....
Vestervig	29.84	757.9	30.01	762.2	53.2	11.8	88	WSW	.....	.....	7	.....	4	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.69	754.0	30.24	768.0	57.2	14	89	SW	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.12	765.0	30.23	767.7	62.6	17.0	67	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bonvallet, Director.
Avignon, Normal School	30.13	765.4	30.21	767.4	74.8	23.8	53	SW	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.65	753.2	30.21	767.3	61.0	16.1	52	E	.....	.....	2	.....	0	.....	.....	0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Albert Cheux.
Beauvais, Normal School	29.96	760.9	30.24	768.1	56.8	13.8	60	E	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.35	745.4	30.24	768.0	64.0	17.8	71	SSW	.....	.....	2	.....	1	.....	E	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	29.37	746.1	30.31	769.8	67.5	19.7	58	S	.....	.....	1	.....	5cn	.....	S	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.65	753.2	30.21	767.3	58.1	14.5	63	SW	.....	.....	1	.....	1	.....	SW	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.83	757.6	30.07	763.8	72.7	22.6	72	S	.....	.....	1	.....	1	.....	Calm	0	0	.....	The Staff.
Carcassonne, Normal School	29.78	756.4	30.22	767.6	71.6	22	58	E	.....	.....	1	.....	2	.....	E	0	0	Slightly cl'dy	Septembre, Director.
Caen	30.11	764.9	30.19	766.7	66.0	19.2	60	S	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Lair, Director.
Chartres, Normal School	29.59	751.6	30.15	765.7	64.2	17.9	.....	SSE	.....	.....	2	.....	4	.....	.....	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.91	759.7	30.23	767.7	64.0	17.8	69	N	.....	.....	1	.....	2	.....	N	0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.83	732.2	30.13	765.4	75.2	24.0	28	NE	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.37	746.0	30.25	768.4	52.5	11.4	80	NNW	.....	.....	1	c	.....	NNW	.....	0	0	.....	Dr. Coulet, Director.
Commune de Gréasque*	29.14	740.1	30.28	769.1	73.0	22.8	53	NW	.....	.....	1	.....	5	SW	.....	0	0	½ covered	M. Kiéa.
Grenoble, Normal School	29.37	746.0	30.12	765.1	65.5	18.6	73	NE	.....	.....	1	.....	5ck	.....	E	0	0	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mouillot, Director.
Le Mans, Normal School	29.91	759.8	30.22	767.6	63.0	17.2	81	NE	.....	.....	1	.....	5	.....	SE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.31	744.4	30.21	767.4	62.6	17	81	SW	.....	.....	1	.....	2	.....	SW	0	0	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	30.08	763.9	30.17	766.4	66.6	19.2	72	S	.....	.....	1	.....	.....	S	SW	0	0	.....	T. Carré, Director.
Mâcon, Normal School	30.26	768.6	30.29	769.4	59.0	15	85	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	M. Galxin, Director
Mirecourt, Normal School	29.19	741.4	30.21	767.3	56.8	13.8	67	N	.....	.....	1	.....	2cs	.....	S	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	30.01	762.2	30.21	767.3	72.7	22.6	69	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Boyer, Director.
Privas, Normal School	29.18	741.2	30.24	768.2	71.6	22	58	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.38	644.7	.....	.....	56.3	13.5	40	NW	.....	.....	1	.....	5	.....	.....	0	0	.....	Alluard, Director.
Rochefort, Naval Obs'y	30.15	765.7	30.18	766.5	68.0	20.0	74	E	.....	.....	1	.....	8	E	E	0	0	¾ covered	Lt. Decante, Director.
Rouen, Normal School	30.11	764.7	30.19	766.9	61.2	16.2	61	NNE	.....	.....	1	.....	2	.....	SW	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)	.....	.....	30.14	765.6	68.7	20.4	60	SSE	.....	.....	2	.....	1	.....	NNW	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	30.05	763.2	30.21	767.4	60.4	15.8	52	N	.....	.....	1	.....	1	WNW	.....	0	0	.....	E. Renou.
Tarbes, Normal School	29.62	737.2	30.10	764.5	59.0	15	78	WNW	.....	.....	2	.....	5	WSW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.53	750.0	30.22	767.5	75.2	24	67	E	.....	.....	1	.....	2	.....	SW	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.67	758.7	82.8	28.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.08	2.	.....	L'Abbé Marchés.
Lyons	.....	.....	30.19	766.8	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	0	0	.....	L. Jays.
Marseilles, Observatory	.....	.....	30.22	767.6	71.2	21.8	59	SW	.....	.....	1-2	.....	5	.....	.....	0	0	.....	The Staff.
Mont-Louis	25.10	637.6	30.42	772.6	62.1	16.7	22	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	M. Cave.
Nice	.....	.....	30.24	768.2	69.8	21.0	73	SE	.....	.....	1	.....	7	.....	.....	0	0	Hazy	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.93	760.2	30.21	767.2	60.6	15.9	47	Calm	.....	.....	0	.....	1	.....	NW	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	30.23	767.8	69.3	20.7	73	E	7.4	3.33	.....	.....	5	.....	NE	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.78	578.7	.....	.....	60.4	15.8	.....	NW	.....	.....	1	.....	8	.....	.....	0	0	Cloudy	Gen'l de Nansouty
Toulouse, Observatory	29.49	749.1	30.22	767.6	72.1	22.3	46	SE	.....	.....	2	.....	2	.....	.....	0	0	.....	The Staff.
Tours	29.93	761.5	30.18	766.5	65.1	18.4	60	E	.....	.....	1	.....	2	.....	W	0	0	.....	C. Marquet.
Versailles	.....	.....	30.21	767.4	63.3	17.4	41	E	.....	.....	1	.....	0	.....	.....	0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.97	761.2	29.99	761.8	77.0	25.0	97	SE	5.8	2.6	.....	.....	11c	.....	.....	0	0	Clear	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–12	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.34	745.3	30.19	766.8	52.7	11.5	70	W			3		1	W		0	0		Prof. Dr. Hoh.
Berlin	30.05	763.3	30.23	767.7	59.2	15.1	53	S			1		7			0	0		Prof. Arndt.
Breslau	29.75	755.6	30.28	769.2	56.8	13.8	48	S			2		2			0	0		Royal University Obs'y
Carlsruhe	29.80	757.0	30.24	768.0	54.5	12.5	77	E			1		2			0	0		Albert Senz.
Cassel	29.63	752.6	30.24	768.1	56.8	13.8	63	W			2		2	W		0	0	Foggy	Dr. H. Möhl.
Crefeld	30.06	763.4	30.22	767.5	60.8	16.0	55	SE			1		1			0	0		Director Lose.
Emden	30.20	767.1	30.24	768.0	62.1	16.7	77	W			3		9			0	0		Prof. Prestel.
Frankfort on the Main	29.91	759.6	30.27	768.9	56.8	13.8		W			1		1			0	0		Physical Society.
Friedrichshafen	28.79	731.3	30.23	767.9	55.0	12.8	89	SW			1		0			0	0		M. Wilhelm.
Hamburg	30.11	764.9	30.19	766.7	57.4	14.1	77	SW			4		10ks			0	0	Pleasant	Captain F. Hegemann.
Kiel	30.12	765.0	30.13	765.4	54.3	12.4	91	SW			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.11	764.8	30.19	766.9	54.5	12.5	57	SW			2		8			0.035	0.9		Prof. E. Luther.
Köslin			30.14	765.6	55.9	13.3		SW			4		1			0	0		H. Müller.
Leipsic, Observatory	29.84	757.8	30.26	768.5	59.9	15.5	47	SW			2		8			0	0		Prof. Bruhns.
Memel, Naval School	30.13	765.2	30.17	766.4	55.4	13.0	62	SW			6		9s						Reinbrecht and Skalweit.
Neufahrwasser	30.20	767.0	30.21	767.4	57.0	13.9	54	SW			4		9			0	0		A. Lothes.
Posen	30.00	762.0	30.29	769.4	57.0	13.9	42	SE			4		5			0	0		Dr. Magener.
Strassburg (in Alsace)	29.72	754.8	30.27	768.9	54.1	12.3	81	Calm			0		6			0	0		Astronomical Observatory.
Stuttgart	29.27	743.4	30.21	767.4	56.3	13.5	74	N			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.68	753.8	30.21	767.2	54.5	12.5	72	E			1		6			0.006	0.16	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.72	729.6	30.23	767.8	58.1	14.4	57	W	1.3	0.6			5ck	W		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.12	765.1	30.15	766.7	55.0	12.8	75	SSW			5		7ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.72	755.0	30.11	764.7	73.9	23.3		NE			1.5							⅛ Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.26	743.2	29.72	754.9	94.0	34.4	48	N					2	S		0	0		D. clouds
Bombay	29.74	755.3	29.78	756.3	79.9	26.6	93	SE	20	8.9			10	S	S	0.10	2.5		Raining
Poona	27.76	705.2	29.77	756.1	76.3	24.6	82	SW					10		SW	0.50	12.7		Thunder
Lahore	28.88	733.5	29.60	751.8	92.1	33.4	40	N	0.9	0.4						0	0		Blue sky
Belgaum	27.28	692.9	29.82	757.5	78.7	23.2	88	SW	6	2.7			9		SW	0.02	0.5		D. clouds
Roorkee	28.71	729.2	29.59	751.5	86.8	30.4	56	Calm	2	0.9						0	0		
Agra	29.07	738.3	29.61	752.1	96.1	35.6	36	W								0	0		
Nagpur	28.66	728.0	29.70	754.4	80.8	27.1	80	Calm	3.7	1.6			7		W	1.82	46.2		D. clouds
Lucknow	29.25	743.0	29.62	752.2	85.9	29.9	61	Calm	0.3	0.1						0	0		Blue sky
Allahabad	29.33	744.9	29.64	752.7	84.5	29.2	70	Calm	0.6	0.3			0			0	0		Blue sky
Patna	29.47	748.4	29.65	753.0	85.8	29.9	76	Calm	0.1	0.04			2	E	E	0	0		
Hazaribagh	27.68	703.1	29.67	753.6	81.8	27.7	73	NNE	3.8	1.7			3			0	0		
Cuttack	29.63	752.7	29.72	754.8	81.5	27.5	85	SSW	1.8	0.8			7			0.79	20.1		D. clouds
Calcutta (Alipore)	29.66	753.4	29.69	754.0	79.2	26.2	94	ESE	2	0.9			6			0.32	8.1		Thunder-shower
Goalpara	29.32	744.6	29.71	754.6	77.7	25.4	94	Calm	2	0.9			3			0	0		D. clouds
Chittagong	29.65	753.0	29.74	755.4	80.4	26.9	96	NE	1.4	0.6			10			0.10	2.5		Raining
Sibsagar	29.35	745.4	29.68	753.8	82.3	27.9	61	ENE	1.1	0.5			10	W	W	0	0		D. clouds
Jubbulpore	28.35	720.0	29.70	754.5	80.3	26.8	71	NE	2.2	1.0			4			0	0		D. clouds

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.85	758.1	30.25	768.4	63.1	17.3	45	SW	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.14	765.5	30.25	768.3	64.4	18.0	51	NW	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	30.05	763.3	30.24	768.2	66.6	19.2	48	SW	1.3	0.6	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.92	734.5	30.23	767.7	66.2	19.0	46	SSW	.....	.....	4	.....	2	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.72	754.9	30.23	767.9	65.5	18.6	66	WNW	.....	.....	2	.....	2	NW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.35	745.5	30.25	768.3	64.4	18.0	62	SW	2.5	1.1	.....	.....	5	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.33	719.6	30.23	767.7	61.5	16.4	58	SW	.....	.....	4	.....	6	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.01	762.3	30.23	767.9	70.5	21.6	53	E	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.04	763.1	30.21	767.3	71.6	22.0	44	NW	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.94	760.5	30.26	768.5	65.5	18.6	55	ESE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.96	761.0	30.22	767.6	69.8	21.0	15	S	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	30.09	764.2	30.17	766.4	78.1	25.6	51	NE	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.72	729.6	30.27	768.8	57.4	14.1	62	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	30.02	762.5	30.19	766.9	73.4	23.0	40	N	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	30.00	762.0	30.20	767.0	72.0	22.2	29	N	.....	.....	2	.....	4	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.93	760.2	30.18	766.6	66.9	19.4	48	NNW	12.5	5.6	.....	.....	2	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.95	760.7	30.14	765.5	74.5	23.6	66	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.31	744.5	30.18	766.6	69.6	20.9	72	SW	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.95	760.8	30.21	767.2	72.1	22.3	63	ENE	4.9	2.2	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.13	765 3	30.21	767.2	73.2	22.9	69	W	4.9	2.2	.....	.....	8	WSW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.87	758.7	30.07	763.8	72.9	22.7	95	NNE	0.2	0.1	.....	.....	0	.....	.....	0.023	0.59	Clear	I. Arai, Director.
Tokei (Yeddo) Observatory	29.86	758.4	29.93	760.2	68.0	20.0	95	Calm	0	0	.....	.....	0s;ck	.....	.....	0	0	Cloudy	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.3	18.5	74	N	.....	.....	3	8c	.....	E	.....	Inap.	Inap.	Cloudy	P. Ceballos.
Guadalajara	25.04	635.9	30.02	762.5	53.6	12.0	66	Calm	.....	.....	0	4	.....	.....	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.42	620.3	29.97	761.4	60.1	15.6	83	SW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	28.10	686.7	30.01	762.3	57.2	14.0	90	Calm	0	0	.....	0	10k	.....	NE	0.10	2.5	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	57.7	14.3	81	NNW	.....	.....	1	0	1s	.....	.....	0	0	Clear	M. V. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpam	29.85	758.1	29.86	758.4	75.9	24.4	92	NW	.....	.....	4	0	10	.....	N	1.647	41.8	Covered	M, M. Cházaro.
San Luis Potosi	24.15	613.6	30.06	763.4	61.0	16.1	74	ESE	.....	.....	.....	.....	10	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.89	759.1	29.92	759.8	82.4	28.0	74	ENE	24.4	10.9	.....	.....	10n	.....	ENE	0.120	3.2	Threatening	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.24	590.4	30.01	762.2	53.6	12.0	87	NNW	2.7	1.2	.....	1	1	Calm	Calm	0.039	1.00	Almost clear	Prof. P. Spina.
Durango	24.21	614.8	30.05	763.3	63.8	17.7	79	NNW	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.30	718.7	29.91	759.8	78.4	25.8	75	E	2.3?	4.6?	.....	.....	10	.....	.....	0	0	Covered	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.24	768.1	30.24	768.1	62.6	17.0	.....	S	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Groningen	30.14	765.5	30.19	766.9	59.2	15.1	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.17	766.2	30.17	766.2	60.8	16.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.22	767.6	30.22	767.6	66.0	18.9	73	S	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.18	766.6	30.23	767.8	61.5	16.4	69	SSW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.88	758.9	29.93	760.3	48.2	9.0	61	NNW	21.7	9.7	.....	.....	0	.....	.....	0	0	.....	
Brônø	29.92	759.9	29.96	760.9	44.6	7.0	71	S	7	3	.....	.....	3	.....	.....	0.118	3.0	.....	
Christiania	29.65	753.1	29.80	756.8	50.7	10.4	65	N	13	6	.....	.....	4	.....	.....	0.984	25.0	.....	
Tromsø	29.84	757.9	29.88	759.0	36.7	2.6	65	Calm	0	0	.....	10	.....	.....	.....	0.244	6.2	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.57	751.1	29.76	755.9	68.4	20.2	83	W	9.8	4.4	.....	.....	5	.....	.....	0.394	10.0	.....	Dr. J. A. Sampaio.
Ocampo Major	29.10	739.0	30.09	764.2	77.4	25.2	44	E	11.2	5.0	.....	.....	10	SSW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.96	760.9	30.04	763.1	74.7	23.7	62	SE	4.3	1.9	.....	.....	7	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.70	754.3	30.04	763.1	74.3	23.5	55	NE	7.4	3.3	.....	.....	10	S	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.76	755.9	29.83	757.7	73.4	23.0	83	SW	18.1	8.1	.....	.....	3	.....	.....	0.311	7.9	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, Saint Paul de Loanda	.....	.....	29.98	761.5	82.4	28.0	.....	NW	.....	.....	3	.....	9	.....	NW	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	29.86	758.4	83.3	28.5	.....	ENE	.....	.....	1	.....	8	.....	ENE	1	.....	D. Clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kief	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.08	764.1	30.19	766.7	75.2	24	67	S	2.9	1.28	.....	1c	.....	W	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.05	763.2	30.10	764.6	81.7	27.6	47	SE	3.0	1.34	.....	5	3	W	.....	0	0	Almost cov'd	Prof. Manuel de Naveras
Burgos, Met. Obs'y	27.24	691.9	.....	.....	77.4	25.2	53	NE	2.2	0.99	.....	.....	.....	.....	.....	0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.96	710.3	30.10	764.5	79.3	26.3	45	NE	6.0	2.67	.....	2	4	NE	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	30.04	763.1	30.19	766.8	77.6	25.3	63	W	3.0	1.36	.....	3	5	SW	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.12	739.6	29.97	761.3	81.5	27.5	44	SE	7.0	3.14	.....	7	0	SW	.....	0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.82	757.5	29.89	759.1	77.0	25.0	87	Calm	0	0	.....	0	4k	.....	NE	0.768	19.5	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.6	30.00	762.0	78.6	25.9	54	ESE	37.5	16.8	.....	2	6	E	E	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.78	756.5	29.87	758.8	83.5	28.6	88	S	4.0	1.78	.....	6s	3k	S	S	0	0	D. clouds	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.89	759.1	29.93	760.1	43.2	6.2	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	
Umea	29.93	760.2	29.98	761.5	46.4	8.0	59	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	25.84	758.0	29.89	759.3	46.9	8.3	82	NNE	.....	.....	4	.....	9	.....	.....	0	0	.....	
Stockholm	29.54	750.2	29.71	754.7	49.0	9.5	92	SSW	.....	.....	.....	.....	10	.....	.....	0.008	0.2	.....	
Wisby	29.82	757.4	29.88	758.9	50.0	10.0	92	SW	.....	.....	8	.....	10	.....	.....	0.016	0.4	Raining	
Sub-Series.																			
Upsala	29.60	751.8	29.67	753.7	48.0	8.9	100	S	.....	.....	.....	.....	10	.....	S	0.682	17.33	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.80	731.4	30.21	767.2	60.8	15.7	76	N	.....	.....	1	.....	4	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.61	726.7	30.23	767.9	58.6	14.8	82	W	.....	.....	2	.....	3	.....	.....	0	0	Bright	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.0 mm.; Thermometer, +0.7 cent.; Relative Humidity, +7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.19	766.8	60.8	16.0	56	N	12	5.5	.....	.....	10	.....	N	0	0	.....	The Observatory.
Valona	.....	.....	30.21	767.8	68.4	20.2	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.86	758.4	29.97	761.2	78.6	25.9	69	NW	.....	.....	3	.....	8ks	.....	NW	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.69	754.1	29.99	761.7	59	15.0	.....	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N B	29.80	756.9	29.86	758.4	63	11.7	88	N	1	0.4	.....	2k	8ks	SW	SW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.81	757.2	29.85	758.2	57	13.9	91	SW	4	1.8	.....	.....	8ks	.....	SW	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.93	760.2	51.3	10.7	88	W	.....	.....	1	0	0	.....	.....	0.018	0.46	Clear	James Smith, M. A.
Dalhousie, N. B	29.84	757.9	29.99	761.7	50	10.0	93	W	.....	.....	1	.....	.....	.....	.....	0.05	1.3	Fine	H. A. Johnson.
Esquimault, B. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	W. H. Bevis.
*Father Point, Quebec	29.87	758.7	29.89	759.2	43	6.1	94	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	29.85	758.2	29.91	759.7	55.0	12.8	75	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	29.17	740.9	30.02	762.5	34	1.1	96	W	4	1.8	.....	5k	5ks	W	W	0	0	Cloudy	James Stewart.
Granton, Ontario	28.96	735.6	30.06	763.5	49	9.4	100	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.74	755.4	29.87	758.7	55	12.8	98	Calm	0	0	.....	0	0	.....	.....	Inap	Inap.	Clear	F. Allison, M. A.
Hamilton, Ontario	29.70	754.4	30.07	763.8	53.3	11.8	88	SW	.....	.....	2	4c	0	W	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.91	759.7	29.93	760.2	49	9.4	85	SE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.67	753.6	30.00	762.0	53	11.7	85	W	6	2.7	.....	0	0	.....	.....	0.03	0.8	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.78	756.4	29.82	757.4	59.6	15 3	69	W	2	0.9	.....	2k	0	.....	.....	0.05	1.3	Fair	C. H. Rigby.
*Montreal, Quebec	29.75	755.6	29.95	760.7	52	11.1	84	SW	10	4.5	.....	0	2ks	.....	.....	0.42	10.7	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	29.99	761.7	47	8.3	100	E	2	0.9	.....	0	0	.....	.....	0.08	2.0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.31	744.5	30.07	763.8	45.7	7.6	76	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.38	746.2	30.07	763.8	50	10.0	96	W	5	2.2	.....	5k	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.82	757.4	29.86	758.4	60.5	15.8	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.44	747.8	30.08	764.0	53	11.7	75	W	4	1.8	.....	.....	10ks	.....	W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.62	752 3	29.95	760.7	48	8.9	89	NW	.....	.....	3	Haze	Fog	.....	.....	0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.40	749.0	29.95	760.7	50	10.0	86	Calm	0	0	.....	.....	8s	.....	W	0	0	Fair	W. H. McIntyre.
St. Andrews, N. B	29.86	758.4	29.91	759.7	56	13.3	80	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	29.74	755.4	29.90	759.4	52	11.1	100	NW	1	0.4	.....	0	3k	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.32	744.7	30.02	762.5	55	12.8	83	W	12	5.4	.....	2k	0	W	.....	0	0	Clear	K. Stewart.
Stayner, Ontario	29.21	741.9	29.98	761.5	54	12.2	83	Calm	0	0	.....	2k	0	NW	.....	0.02	0.5	Fair	R. J. Cole.
Stratford, Ontario	28.77	730.7	30.05	763.3	47.0	8.3	95	W	6	2.7	.....	3cs	4s	W	.....	0	0	Fair	C. J. MacGregor, M. A
*Sydney, C. B	29.84	757.9	29.87	758.7	62	16.7	91	SW	8	3.6	.....	0	5s	.....	SW	0.05	1.3	Fair	T. C. Hill.
*Toronto, Ontario	29.64	752.8	30.03	762.7	51	10.6	88	W	4	1.8	.....	2cs	0	SW	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	43.0	6.1	92	S	.....	.....	.....	5k	5s	.....	.....	0.01	0.3	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,025 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.8 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	30.02	762.5	52	11.1	86	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Smoky	
Alpena, Michigan	29.38	746.2	30.02	762.5	47	8.3	77	W	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Atlanta, Georgia	28.93	734.8	30.06	763.5	63	17.2	78	NW	.....	.....	1	0	Sm'e	.....	Calm	Inap.	Inap.	Clear	
Atlantic City, New Jersey	30.03	762.7	30.05	763.3	56	13.3	74	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	29.90	759.4	30.08	764.0	64	17.8	83	NW	4	1.8	.....	0	Haze	.....	.....	0	0	Hazy	
Baltimore, Maryland	30.04	763.0	30.08	764.0	60	15.6	55	NW	4	1.8	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	61	16.1	82	N	14	6.3	.....	2c	0	Calm	.....	0	0	Clear	
Bismarck, Dakota	28.40	721.3	30.25	768.3	35	1.7	80	W	6	2.7	.....	2cs	0	Calm	.....	Inap.	Inap.	Clear	
Boerne, Texas	28.58	725.9	.....	.....	72	22.2	90	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Boise City, Idaho	27.35	694.7	30.31	769.9	34	1.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.87	758.7	30.02	762.5	60	15.6	66	NW	4	1.8	.....	1cs	Haze	Calm	NW	0	0	Hazy	
Brackettville, Texas	28.89	733.8	29.88	758.9	75	23.9	86	SE	6	2.7	.....	.....	10s	.....	S	0.58	14.7	Clearing	
Breckenridge, Minnesota	29.13	739.9	30.17	766.3	33	—0.6	100	W	9	4.0	.....	0	0	.....	.....	0.07	1.8	Clear	
Brownsville, Texas	29.92	760.0	29.98	761.5	72	22.2	95	Calm	0	0	.....	2k	0	Calm	.....	0.30	7.6	Clear	
Buffalo, New York	29.33	745.0	30.02	762.5	57	13.9	75	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	65	18.3	49	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.77	756.1	30.02	762.5	54	12.2	74	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Cairo, Illinois	29.65	753.1	30.04	763.0	62	16.7	83	NE	4	1.8	.....	8c	0	W	.....	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	50	10.0	51	W	.....	.....	1	2k	2s	W	Calm	0	0	Fair	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	66	18.9	28	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.74	679.2	30.23	767.8	54	12.2	43	Calm	.....	.....	0	5c	0	Calm	.....	0	0	Fair	
Campo, California	27.36	694.9	29.93	760.2	39	3.9	71	E	4	1.8	.....	0	0	..., ...	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.91	759.7	29.92	760.0	72	22.2	68	NE	37	16.5	.....	10cs	0	SW	.....	0	0	Cloudy	
Cape Henry, Virginia	29.98	761.5	30.01	762.2	67	19.4	69	N	26	11.6	.....	5cs	0	SE	.....	0	0	Fair	
Cape Lookout, N. Carolina	29.90	759.4	29.92	760.0	68	20.0	74	NE	32	14.3	.....	5c	0	W	.....	0	0	Fair	
Cape May, New Jersey	30.04	763.0	30.07	763.8	65	18.3	58	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.22	742.2	29.89	759.2	73	22.8	90	Calm	0	0	.....	.....	10s	.....	E	0	0	Cloudy	
Charleston, South Carolina	29.97	761.2	30.03	762.7	67	19.4	79	N	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	24.16	613 6	30.10	764.5	31	—0.6	79	SW	4	1.8	.....	5cs	0	NW	.....	0	0	Fair	
Chicago, Illinois	29.44	747.8	30.12	765.0	58	14.4	64	N	4	1.8	.....	5cs	0	W	N	0.02	0.5	Cloudy	
Cincinnati, Ohio	29.49	749.0	30.14	765.5	55	12.8	74	SE	3	1.3	.....	4k	Sm'e	W	Calm	0	0	Fair	
Cleveland, Ohio	29.41	747.0	30.13	765.3	54	12.2	67	S	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Coleman City, Texas	28.23	717.0	29.86	758.4	65	18.3	73	S	4	1.8	.....	1ck	2s	SW	S	0	0	Fair	
Columbus, Ohio	29.29	744.0	30.13	765.3	51	10.6	78	N	3	1.3	.....	5ck	Fog	NW	Calm	0	0	Fair	
Concho, Texas	28.10	713.7	29.73	755.1	64	17.8	69	NW	1	0.4	.....	0	8s	.....	E	0	0	Cloudy	
Corsicana, Texas	29.57	751.1	30.03	762.7	67	19.4	79	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.56	750.8	30.20	767.1	55	12.8	81	N	1	0.4	.....	4cs	Fog	Calm	Calm	Inap.	Inap.	Fair	
Decatur, Texas	28.59	733.8	30.04	763.0	66	18.9	69	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.37	743.4	30.05	763.3	64	17.8	78	E	3	1.3	.....	2cs	0	Calm	.....	0	0	Fair	
Denver, Colorado	24.92	633.0	30.14	765.5	37	2.8	53	S	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Des Moines, Iowa	29.32	744.7	30.22	767.6	46	7.8	84	Calm	0	0	.....	2c	Haze	Calm	Calm	0	0	Hazy	
Detroit, Michigan	29.42	747.3	30.09	764.3	53	11.7	73	SW	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Dodge City, Kansas	27.52	699.0	29.79	756.7	55	12.8	93	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Dubuque, Iowa	29.48	748.8	30.19	766.8	48	8.9	78	Calm	0	0	.....	2ck	Fog	NW	Calm	0	0	Fair	
Duluth, Minnesota	29.37	746.0	30.06	763.5	45	7.2	76	W	13	5.8	.....	0	2s	.....	W	0	0	Fair	
Eagle Pass, Texas	29.24	742.7	29.95	760.7	74	23.3	95	E	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Eastport, Maine	29.84	757.9	29.90	759.4	59	15.0	70	W	4	1.8	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Edinburg, Texas	.....	.....	.....	.....	73	22.8	95	Calm	.....	.....	0	.....	Fog	.....	Calm	1.02	25.9	Dense fog	
El Paso, Texas	.....	.....	.....	.....	69	20.6	52	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.37	746.0	30.08	764.0	56	13.3	81	S	4	1.8	.....	5ck	5s	W	W	0	0	Cloudy	
Escanaba, Michigan	29.41	747.0	30.07	763.8	43	6.1	75	W	6	2.7	.....	5ck	0	W	.....	0	0	Fair	
Florence, Arizona	28.36	720.3	29.96	761.0	66	18.9	41	N	.....	.....	1	8ck	0	N	.....	0	0	Fair	
Fort Craig, New Mexico	25.47	646.9	29.54	750.3	51	10.6	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.23	640.8	30.19	766.8	65	18.3	57	W	3	1.3	.....	2c	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.54	750.3	30.06	763.5	64	17.8	83	NW	1	0.4	.....	.....	10ks	.....	NW	0.41	10.4	Cloudy	
Fort Griffin, Texas	28.75	730.2	29.99	761.7	67	19.4	84	Calm	0	0	.....	5ck	2s	Calm	Calm	0	0	Fair	
Fort McKavett, Texas	27.81	706.4	29.67	753.6	70	21.1	70	SW	6	2.7	.....	2ck	0	NE	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.82	732.0	29.90	759.4	65	18.3	78	SE	12	5.4	.....	0	2s	.....	Calm	0.21	5.3	Fair	
Fredericksburg, Texas	28.28	718.3	29.79	756.7	70	21.1	90	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.96	761.0	30.00	762.0	79	26.1	70	E	8	3.6	.....	2c	0	E	.....	0	0	Clear	
Graham, Texas	29.05	760.7	29.96	761.0	74	23.3	68	E	6	2.7	.....	8ck	0	W	.....	0	0	Fair	
Grand Haven, Michigan	29.48	748.8	30.12	765.0	56	13.3	75	Calm	0	0	.....	5k	2s	W	Calm	0	0	Fair	
Indianapolis, Indiana	29.33	745.0	30.10	764.5	57	13.9	63	N	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianola, Texas	29.98	761.5	30.01	762.2	78	25.6	86	S	4	1.8	.....	1k	0	SE	.....	0	0	Clear	
Jacksboro, Texas	29.08	738.6	30.18	766.6	68	20.0	79	E	10	4.5	.....	2c	0	S	.....	0	0	Clear	
Jacksonville, Florida	29.95	760.7	29.98	761.5	71	21.7	85	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.50	749.3	30.11	764.8	58	14.4	76	NE	5	2.2	.....	0	0s	.....	Calm	0	0	Cloudy	
Key West, Florida	29.87	758.7	29.90	759.4	79	26.1	74	N	16	7.2	.....	1c;k	0	Calm;N	.....	0	0	Clear	
Kittyhawk, North Carolina	29.94	760.5	29.97	761.2	70	21.1	66	NE	40	17.9	.....	2cs	0	S	.....	0	0	Fair	
Knoxville, Tennessee	29.14	740.1	30.15	765.8	52	11.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.42	747.3	30.17	766.3	46	7.8	92	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	52	11.1	53	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.53	750.0	29.86	758.4	76	24.4	82	E	3	1.3	.....	5k	0	E	.....	0	0	Fair	
Lead City, Dakota	25.02	635.5	30.29	769.4	27	— 2.8	76	S	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Leavenworth, Kansas	29.29	744.0	30.13	765.3	58	14.4	58	NE	6	2.7	.....	.....	10ks	.....	W	Inap.	Inap.	Cloudy	
Los Angeles, California	29.53	750.0	29.86	758.4	60	15.6	88	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.55	750.6	30.11	764.8	56	13.3	75	S	3	1.3	.....	0	1s	.....	Calm	0	0	Fair	
Lynchburg, Virginia	29.45	748.0	30.13	765.3	57	13.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	29.17	740.9	30.16	766.1	50	10.0	71	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.32	744.7	30.03	762.7	45	7.2	76	W	18	8.0	.....	0	0	.....	.....	0.03	0.8	Clear	
Mason, Texas	28.37	720.6	30.08	764.0	69	20.6	95	SE	5	2.2	.....	5c	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.76	755.9	30.08	764.0	60	15.6	70	N	3	1.3	.....	2c	0	SW	.....	0	0	Fair	
Milwaukee, Wisconsin	29.42	747.3	30.15	765.8	59	10.0	79	W	8	3.6	.....	5ck	1s	W	Calm	0	0	Fair	
Mobile, Alabama	29.96	761.0	30.00	762.0	71	21.7	80	N	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Montgomery, Alabama	29.82	757.4	30.05	763.3	70	21.1	75	NE	1	0.4	.....	0	8s	.....	NE	0	0	Fair	
Morgantown, West Virginia	29.08	738.6	30.14	765.5	51	10.6	79	W	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	23.76	603.5	30.12	765.0	33	0.6	100	NW	35	15.6	.....	.....	Fog	.....	NW	0.05	1.3	Foggy	
Nashville, Tennessee	29.50	749.3	30.03	762.7	67	13.9	75	Calm	0	0	.....	8c	Sm'e	Calm	Calm	0	0	Fair	
New Haven, Connecticut	29.93	760.2	30.05	763.3	61	16.1	66	N	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
New London, Connecticut	30.00	762.0	30.05	763.3	60	15.6	77	N	4	1.8	.....	1cs	Haze	SW	Calm	0	0	Clear	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	76	24.4	56	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	29.97	761.2	30.02	762.5	62	16.7	67	NW	4	1.8	.....	1k	0	.....	.....	0	0	Clear	
New York, New York	29.90	759.4	30.07	763.8	63	17.2	47	NW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	29.93	761.7	30.04	763.0	68	20.6	60	NE	14	6.3	.....	5c	0	N	.....	0	0	Fair	
North Platte, Nebraska	27.29	693.2	29.91	760.5	40	4.4	78	Calm	0	0	.....	10c	0	SW	.....	0	0	Cloudy	
Olympia, Washington Ter.	30.09	764.3	30.13	765.3	39	3.9	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Omaha, Nebraska	29.07	738.4	30.16	766.1	49	9.4	71	N	2	0.9	.....	5ck	0	W	.....	0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.72	754.9	30.04	763.0	54	12.2	80	SW	6	2.7	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Pembina, Dakota	29.19	741.4	30.05	763.3	34	1.1	90	W	8	3.6	.....	0	2s	.....	W	0	0	Clear	
Philadelphia, Pa	30.04	763.0	30.09	764.3	62	16.7	46	N	10	4.5	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.68	728.5	.....	.....	66	18.9	36	Calm	0	0	.....	10k	0	SE	.....	0	0	Cloudy	
Pike's Peak, Colorado	17.91	454.7	30.12	765.0	25	— 3.9	62	W	28	12.5	.....	8cs	0	Calm	.....	0	0	Fair	
Ploche, Nevada	24.12	612.6	29.89	759.2	47	8.3	41	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	48	8.9	93	NW	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.41	747.0	30.07	763.8	52	11.1	79	W	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Maine	29.94	760.5	29.99	761.7	59	15.0	65	W	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.07	763.8	30.18	766.6	46	7.8	84	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.80	629.9	30.16	766.1	52	11.1	54	S	7	3.1	.....	8ks	0	Calm	.....	0	0	Fair	
Pilot Point, Texas	29.28	743.7	30.09	764.3	69	20.6	65	SE	3	1.3	.....	5ck	2s	S	SE	0	0	Cloudy	
Punta Rassa, Florida	29.92	760.0	29.93	760.2	72	22.2	76	N	8	3.6	.....	2ck	2s	NE	NE	0	0	Fair	
Red Bluff, California	29.51	749.5	29.86	758.4	62	16.7	41	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.80	756.9	30.00	762.0	74	23.3	90	N	.....	.....	1	0	Sm'e	.....	.....	0	0	Smoky	
Rochester, New York	29.43	747.5	30.04	763.0	53	11.7	80	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Roseburg, Oregon	29.53	750.0	30.12	765.0	40	4.4	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.78	756.4	29.86	758.4	54	12.2	80	S	1	0.4	.....	0	2s	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.54	750.3	30.11	764.8	61	16.1	82	N	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Marks, Florida	30.01	762.2	30.02	762.5	68	20.0	79	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.27	743.4	30.11	764.8	44	6.7	75	SW	9	4.0	.....	1ck	0	W	.....	0	0	Clear	
Salt Lake City, Utah	25.74	653.8	30.07	763.8	46.5	8.1	59	NE	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
San Antonio, Texas	29.32	744.7	29.88	758.9	73	22.8	90	NE	1	0.4	.....	2c	5ks	Calm	SE	0	0	Cloudy	
San Diego, California	29.84	757.9	29.91	759.7	62	16.7	94	N	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.13	765.3	58	14 4	76	W	7	3.1	.....	5c;cs	5ks;s	Calm	W	0	0	Threatening	
Sandy Hook, New Jersey	30.02	762.5	30.05	763.3	63	17.2	62	N	14	6.3	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.80	756.9	29.87	758.7	58	14.4	76	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	48	8.9	29	E	2	0.9	.....	1c	0	Calm	.....	0	0	Clear	
Savannah, Georgia	29.94	760.5	30.03	762.7	68	20.0	90	N	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	62	16.7	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.31	617.5	.....	.....	51	10.6	39	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.93	760.2	29.97	761.2	66	18.9	64	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.91	759.7	30.04	763.0	56	13.3	87	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Stockton, Texas	26.96	684.8	29.96	761.0	64	17.8	52	SE	12	5.4	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	29.96	761.0	30.01	762.2	61	16.1	66	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.44	747.8	30.11	764.8	57	13.9	69	W	4	1.8	.....	.....	10a	.....	W	Inap.	Inap.	Light rain	
Tucson, Arizona	.....	.....	.....	.....	70	21.1	40	SE	3	1.3	.....	5ck	0	Calm	.....	0	0	Fair	
Tybee Island, Georgia	29.98	761.5	30.01	762.2	70	21.1	75	N	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.94	760.5	.....	.....	38	3.3	81	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	36	2.2	100	N	.....	.....	2	.....	10s	.....	N	0.02	0.5	Cloudy	
Uvalde, Texas	29.13	739.9	29.92	760.0	75	23.9	81	Calm	0	0	.....	0	5s	.....	E	0	0	Fair	
Vicksburg, Mississippi	29.83	757.7	30.09	764.3	60	15.6	88	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.47	621.5	29.95	760.7	27	— 2.8	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.51	749.5	29.88	758.9	54	12.2	80	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.99	761.7	30.10	764.5	56	13.3	81	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	55	12.8	50	Calm	.....	.....	0	2ck	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	29.89	759.2	29.97	761.2	64	17.8	72	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.77	654.6	30.13	765.3	41	5.0	83	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.97	761.2	30.02	762.5	61	16.1	77	NW	2	0.9	.....	5cs	0	.....	.....	0	0	Fair	
Yankton, Dakota	28.94	735.1	30.30	769.6	33	0.6	79	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29 64	752.8	29.80	756.9	64	17.8	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.55	750.6	29.60	751.8	25.0	— 3.9	100	NE	12	5.4	.....	.....	10n	.....	NE	0.10	2.5	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.86	758.4	29.88	758.9	81	27.2	78	Calm	0	0	.....	4k	4n	Calm	NE	0.40	10.2	Cloudy	Chas. Hasselbrink.
Santiago de Onba, W. I.	29.80	756.9	29.83	757.7	78	25.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	71	SE	5	2.2	.....	2cs	8ks	E	.....	0	0	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	81	27.2	87	Calm	0	0	.....	2c	2ks	Calm	.....	0.47	11.9	.....	James Gall.
Navassa, W. I.	29.77	756.1	29.85	758.2	83	28.3	.....	SE	8.8	3.9	.....	.....	.....	Calm	.....	0.34	8.6	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	84	28.9	75	E	.....	.....	3	0	5k	.....	.....	0	0	Clear	C. J. Hering
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	66.2	19.0	85	Calm	0	0	.....	.....	10s;ks	.....	.....	0.28	7.1	.....	Thomas Herran
Portland, Jamaica, W. I.	29.66	753.4	29.97	761.2	76	24.4	85	S	.....	.....	1	.....	.....	.....	.....	.....	.....	Blue sky	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,060 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,014 (?) ft., or 402.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,060 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.12	765.0	78	25.6	78	25.6	73	NE	4	1.8	.....	.....	2	.....	NE	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	29.97‡	761.2‡	.....	.....	57	13.9	69	W	3	1.3	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.92*	760.0*	73	22.8	70	21.1	92	Calm	.....	.....	0	.....	1c	.....	.....	0	0	.....	.....	Fair	
Adams. S. 44° 32′, W. 100° 11′	29.30	744.2	56	13.3	48	8.9	85	SW	.....	.....	4–5	.....	10	.....	SW	Blank	Blank	Rough	W	Cloudy	
Alaska, Valparaiso, Chili	30.13	765.3	61	16.1	62	16.7	72	Calm	.....	.....	0	.....	2	.....	.....	0	0	Smooth	.....	D. clouds	
Alliance, N. 36° 21′, E. 22° 37′	30.12‡	765.0‡	.....	.....	73	22.8	63	E	.....	.....	3–4	.....	5	.....	E	.....	.....	Light	E	Hazy	
Ashuelot. N. 34° 13′, E. 137° 02′	30.08	764.0	78	25.6	78	25.6	82	NW	.....	.....	3	.....	2	.....	Calm	.....	.....	Mod'ate	.....	Clear	
Canonicus, New Orleans, La	30.04	763.0	54	12.2	75	23.9	77	NW	.....	.....	2	.....	3	.....	.....	.....	.....	... ...	.....	Fair	
Colorado, New York, N. Y.	30.08‡	764.0‡	.....	.....	65	18.3	42	NNW	8	3.6	.....	.....	2	.....	NE	0	0	.....	.....	Light fog	
Constitution, Havre, France	.....	.....	.....	.....	62	16.7	83	E	.....	.....	2	.....	3	.....	Calm	.....	.....	.....	.....	Pleasant	
Despatch, Volo, Turkey	30.15‡	765.8‡	.....	.....	69	20.6	48	NW	.....	.....	2	.....	5	.....	NW	.....	.....	.....	.....	Fair	
Essex, S. 34° 34′, W. 30° 22′	29.96	761.0	64	17.8	61	16.1	94	N	.....	.....	7	.....	10	.....	N	.....	.....	Mod'ate	N	Drizzling	
Franklin, Norfolk, Va	30.13	765.3	70	21.1	70	21.1	86	NNE	12	5.4	.....	.....	2	.....	NNE	0	0	.....	.....	Fair	
Gettysburg Malta	30.14‡	765.5‡	.....	.....	78	25.6	95	SE	.....	.....	1	.....	4	.....	SW	0	0	Smooth	.....	Pleasant	
Guard, S. 15° 22′, W. 37° 46′	30.06	763.5	79	26.1	78	25.6	78	ENE	.....	.....	3	.....	2	.....	ENE	.....	.....	Long	E	Clear	
Hartford, Rio de Janeiro, Brazil	29.95	760.7	.....	.....	74	23.3	81	Calm	0	0	.....	.....	8	.....	.....	0.48	12.2	.....	.....	Cloudy	
Marion, N. 40° 15′, E. 18° 45′	30.18	766.6	69	20.6	70	21.1	52	WNW	.....	.....	2	.....	0	.....	.....	0	0	Smooth	NW	Clear	
Michigan, Erie, Pa	29.92‡	760.0†	.....	.....	54	12.2	87	S	.....	.....	2	.....	10	.....	WSW	.....	.....	.....	.....	Cloudy	
Monocacy, Yokohama, Japan	29.89‡	759.2‡	.....	.....	72	22.2	85	NNW	.....	.....	0–1	.....	1	.....	NNW	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C	30.16	766.1	71	21.7	70	21.1	95	NNE	18	8.0	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Onward, Callao, Peru	30.07†	763.8†	.....	.....	62	16.7	83	SSE	.....	.....	3	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.49	774.4	47	8.3	43	6.1	83	NW	.....	.....	1	.....	10	.....	NW	.....	.....	.....	.....	Overcast	
Passaic, Washington, D. C	.....	.....	.....	.....	57	13.9	100	ESE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth, Portland, Maine	30.04	763.0	59	15.0	58	14.4	82	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, Portsmouth, N. H	30.00‡	762.0‡	.....	.....	62	16.7	77	NW	4.8	2.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	30.10	764.5	84	28.9	85	29.4	79	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	29.91	759.7	75	23.9	75	23.9	95	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Santee, Annapolis, Md	30.05‡	763.3‡	.....	.....	66	18.9	50	N	.....	.....	1	.....	2	.....	SE	0	0	.....	.....	Clear	
Saratoga, Philadelphia, Pa	30.00	762.0	.....	.....	60	15.6	94	N	.....	.....	2	.....	1	.....	.....	0	0	.....	.....	Misty	
St. Louis, League Island, Pa	30.01	762.2	64	17.8	63	17.2	62	SW	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Supply, Havre, France	30.23	767.8	60	15.6	63	17.2	67	SE	.....	.....	2	.....	5	.....	SE	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass	30.01‡	762.2‡	.....	.....	61	16.1	71	NW	.....	.....	1	.....	0	.....	.....	.....	.....	... ...	.....	Hazy	
Trenton, N. 41° 27′, W. 13° 31′	29.97‡	761.2‡	.....	.....	70	21.1	90	S	.....	.....	2–3	.....	8	.....	S	0	0	Smooth	.....	Cloudy	
Tuscarora. N. 23° 05′, W. 109° 35′	29.66	753.4	84	28.9	84	28.9	75	S	.....	.....	1	.....	2	.....	SE	0	0	Smooth	.....	Clear	
Vandalia, Cartagena, Spain	30.20‡	767.1‡	.....	.....	76	24.4	64	ENE	.....	.....	1	.....	2	.....	ENE	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass	.....	.....	.....	.....	57	13.9	81	NW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Fair	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			Capt. Berry.
S. S. China																			Capt. Cobb.
S. S. City of New York																			Capt. Seabury.
S. S. City of Panama																			
S. S City of Peking, N. 36° 07′, W. 36° 41′		30.24*	768.1*	64	17.8	78				2		9		NW		Small	NNE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 7° 13′, W. 82° 6′		29.90*	759.4*	81	27.2	96	Calm			0		10		W	Blank	Mod'ate	S	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Victoria, B. C.		30.19*	766.8*	45	7.2	92	NNE			1		0			Light			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 41° 15′, W. 149° 18′		29.93*	760.2*	66	18.9	79	S			5		n		S		Mod'ate	S	Misty	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 36° 00′, E. 152° 42′		29.80	756.9	77	25.0	91	SSW			4		4		SW		2	Confused	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 46° 50′, W. 48° 37′		29.92	760.0	50.5	10.3	79	WNW			4		7		W	1 hour	5	NNW	Overcast	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Illinois																			Captain Shackelford.
S. S. Indiana, N. 51° 53′, W. 16° 43′		29.75*	755.6*	61	16.1	94	SSE			2		5		SSE	Light	Heavy	Cross		Captain Sargent.
S. S. Ohio, N. 39° 12′ 47″, W. 71° 52′		29.96	761.0	69	20.6	90	NNE			2		8?		NNE	0	Small	SE	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Aneroid; corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 57′ W. 5° 00′		30.14*	765.5*				S	10	4.5			10		SSE		Smooth		Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
S. S. Scandinavian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 16° 37′, W. 64° 00′		29.86	758.4	85	29.4	76	ESE	6	2.7		5ck	2ks		SE	0.07 in or 1.8 mm.	Swell	SE	Cloudy	Capt. James Jorgensen.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 5, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.09	764.3	79.0	26.1	85	W			3		3			0	0	Pretty fair	Kesxuche.
Algiers			30.09	764.2	74.8	23.8	93	Calm			0		5			0	0	Pretty fair	Tourillere.
La Calle			30.19	766.7	75.0	23.9	84	ENE			5		4			0	0	Cloudy	Foufrede.
Tunis			30.21	767.2	81.9	27.7	54	E			5		0			0	0	Clear	Jacques.
Sfax			30.28	769.0	82.4	28.0		ESE			1		0			0	0	Clear	Gau.
Saida			30.12	765.0	81.0	27.2	37	S			5		2			0	0	Fair	Herbin.
Tebessa			30.16	766.1	75.9	24.4	42	S			1		4			0	0	Cloudy	Watrin.
Geriville			30.13	765.2	70.9	21.6	63	SE			7		2			0	0	Fair	Brugniaux.
Laghouat			30.26	768.6	74.8	23.8	50	SW			1		1			0	0	Very fair	Bertrand.
Biskra			30.26	768.5	86.0	30.0	41	SSE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.71	754.6	30.26	768.5	60.3	15.7	56				1		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.49	749.0	30.26	768.5	56.8	13.8	67	SSW			1		10			0	0		Dr. Wierzbiski
Eperies	29.33	744.9	30.21	767.2	56.8	13.8	60	Calm			0		5cs			0	0		Julius Mikolik.
Gratz	29.01	736.8	30.25	768.4	59.0	15.0	77	S			3		0			0	0		Andreas Rospini.
Hermannstadt	28.72	729.5	30.23	767.7	53.6	12.0	81	NW			1		10			0.110	2.8		Prof. A. Gottschling.
Kremsmünster	28.88	733.6	30.23	767.7	55.0	12.8	87	ENE			1		0			0	0		Prof. C. Wagner
Lemberg	29.19	741.5	30.19	766.9	60.9	16.6	73	NE			1		8			0	0		Dr. T. Stanecki.
Pola	30.12	765.0	30.23	767.9	66.4	19.1	64	WNW			3		6cs			0	0		I.R. Hydrographic Office
Szathmar	29.81	757.2	30.28	769.0	58.8	14.9	53	W			5		7			0	0		Julius Csics, S. J.
Szegedin	29.96	761.0	30.24	768.1	57.9	14.4	78	NW			1		8			0	0		Karl Stancsl.
Trieste	30.16	766.1	30.26	768.7	64.9	18.3	76	Calm			0		1			0	0	Almost clear	P. Busin.
Vienna	29.55	750.6	30.27	768.8	56.7	13.7	80	Calm			0		0			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.98	761.6	30.18	766.6	62.1	16.7	69	SE			1	0	0			0	0		Royal Observatory
Furnes	30.17	766.3	30.19	766.9	67.8	19.9	62	SSE			1		2			0	0		M. E. de Cae.
Maeseyck	30.12	765.0	30.25	768.3	62.2	16.8	61	WSW			0		3			0	0		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.91	759.7	30.01	762.2	56.2	13.4	.....	SE	11	4.9	.....	.....	7	.....	.....	0.120	3.05	Misty	W. Boswell.
Ardrossan	29.92	760.0	29.94	760.5	62	16.7	.....	ESE	.....	.....	1	.....	8	.....	.....	.....	.....	Misty	George Carrick.
Armagh, Observatory	.....	.....	29.87	758.7	62.0	16.7	.....	SE	13	5.8	.....	.....	10	.....	.....	.....	.....	Overcast	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.00	762.0	63.1	17.3	.....	SE	15	6.7	.....	.....	10	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.61	752.1	30.01	762.2	65.0	18.3	.....	S	.....	.....	1	.....	6	.....	.....	0.07	1.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.96	761.0	29.99	761.7	84	28.9	.....	E	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.09	764.3	74.0	23.3	.....	S	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	H. Todd. [H. C.
Cardington	.....	.....	30.10	764.5	70.0	21.1	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	John McLaren.
Chatham, School M. E.	29.99	761.7	30.12	765.0	73.2	22.9	.....	S	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.56	725.4	30.00	762.0	66.0	18.9	.....	E	.....	.....	3	.....	4	.....	.....	.....	.....	Fine	Alexander Watt.
Donaghadee	29.89	759.2	29.92	760.0	59	15.0	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	30.10	764.5	30.13	765.3	62	16.7	.....	WSW	.....	.....	2	.....	2	.....	.....	.....	.....	Hazy	J. Costello.
Falmouth, Observatory	29.79	756.7	30.01	762.2	63.1	17.3	.....	ESE	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.51	698.7	29.83	757.7	76.2	24.6	.....	E	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	76.5	24.7	.....	Calm?	.....	.....	2?	.....	5	.....	.....	.....	.....	Raining	
Galway, Queen's College	.....	.....	29.71	754.6	63	17.2	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.09	764.3			.....	E	.....	.....	4	.....	5	.....	.....	.....	.....	Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.76	755.9	29.96	761.0	61.7	16.5	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	30.14	765.5	30.14	765.5	61	16.1	.....	SSE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.94	760.5	30.10	764.5	72.8	22.7	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	The Staff, for G. B. Airy.
Guernsey	29.82	757 4	30.03	762.7	64.5	18.1	.....	SE	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.04	763.0	67	19.4	.....	E	.....	.....	2	.....	3ck	.....	.....	0	0	Fine	M. P. Moyle.
Holyhead	29.90	759.4	29.95	760.7	64	17.8	.....	SSE	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.80	756.9	30.08	764.0	66.2	19.0	.....	SE	.....	.....	3	.....	9	.....	.....	.....	.....	Gloomy	J. Fisher.
Kew, Observatory	30.08	764.0	30.11	764.8	70.1	21.2	.....	SSW	9	4.0	.....	.....	1	.....	.....	.....	.....	Blue sky	The Staff.
Kingstown	29.89	759.2	29.91	759.7	63	17.2	.....	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	George Mitchell.
Leicester, Museum			30.05	763.3	60.3	15.7	.....	S	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.14	765 5	30.21	767.3	76	24.4	.....	SE	.....	.....	1	.....	4k	.....	.....	.....	.....	D. clouds	Sergt. Beckett.
Nairn	29.82	757.4	29.92	760.0	59	15.0	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.94	760.5	81.5	27.5	.....	NE	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.94	760.5	30.13	765.3	71.7	22.1	.....	S	.....	.....	3	.....	1c;ck	.....	SSE	0.045	1.14	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.54	750.3	30.05	763 3	67.1	19.5	.....	S	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.09	764.3	70	21.1	.....	SSE	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	H.E. Bellamy.
Plymouth	29.95	760.7	30.02	762.5	67.3	19.6	.....	SE	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds	John Merrifield.
Roche's Point	29.80	756.9	29.84	757.9	62	16.7	.....	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Dull	W. Kennedy.
Saint Ann's Head	29.80	756.9	29.96	761.0	64	17.8	.....	ESE	.....	.....	5	.....	7	.....	.....	.....	.....	D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.96	761.0	52.8	11.6	.....	SE	26	11.6	.....	.....	10	.....	.....	.....	.....	Drizzling	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.14	765.5	63.0	17.2	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.33	757.7	30.11	764.8	59.0	15.0	.....	SW	.....	.....	1	.....	7	.....	.....	0	0	D. clouds	W. F. Cooper.
Siloth, Rectory	29.94	760.5	29.97	761.2	68.0	20.0	66	Calm	.....	.....	0	.....	6	.....	.....	0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.64	752.8	30.05	763.3	64.9	18.3	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Storroway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.91	759.7	30.12	765.0	71.5	21.9	.....	SE	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	Rev. C. H. Griffith, F.M.S
Thurso	29.88	758.9	29.94	760.5	55	12.8	.....	SE	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	John Trotter.
Truro, Royal Institution			29.99	761.7	69	20.6	.....	SE	.....	.....	4	.....	6	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	29.69	754.1	29.72	754.9	63.7	17.6	.....	SE	35	15.6	.....	.....	7	.....	.....	.....	.....	D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.98	761.5	56.0	13 3	77	NW	.....	.....	2	.....	7k	.....	.....	0	0	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.80	756.9	30.00	761.8	74.5	23.6	56	ENE	5.5	2.5	.....	0	2	.....	N	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.94	760.5	30.03	762.7	53.0	11.7	88	SSE	3	1.3	.....	.....	0	.....	.....	0	0	Heavy dew	R. L. J. Ellery.
Monach Light-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.
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NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—																	
S. S. Algeria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Watson.
Brig Catherine, N. 39° 0′, W. 72° 20′	.....	.....	29.98	761.5	67	19.4	.....	NE	.....	.....	5	.....	6	.....	.....	5	.....	D. clouds	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 19° 30′, W. 54° 35′	.....	.....	30.04	763.0	87	30.6	.....	.....	.....	.....	3	.....	5	.....	.....	.....	Confused.	D. clouds	Capt. D. W. A. Quaile.
S. S. Peruvian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. H. Smith, R. N. [R
Schooner Traveller, N. 56° 30′, W 14° 10′	.....	.....	29.57	751.1	62	16.7	.....	SSW	.....	.....	5	.....	1	.....	.....	5	S	Blue sky	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.
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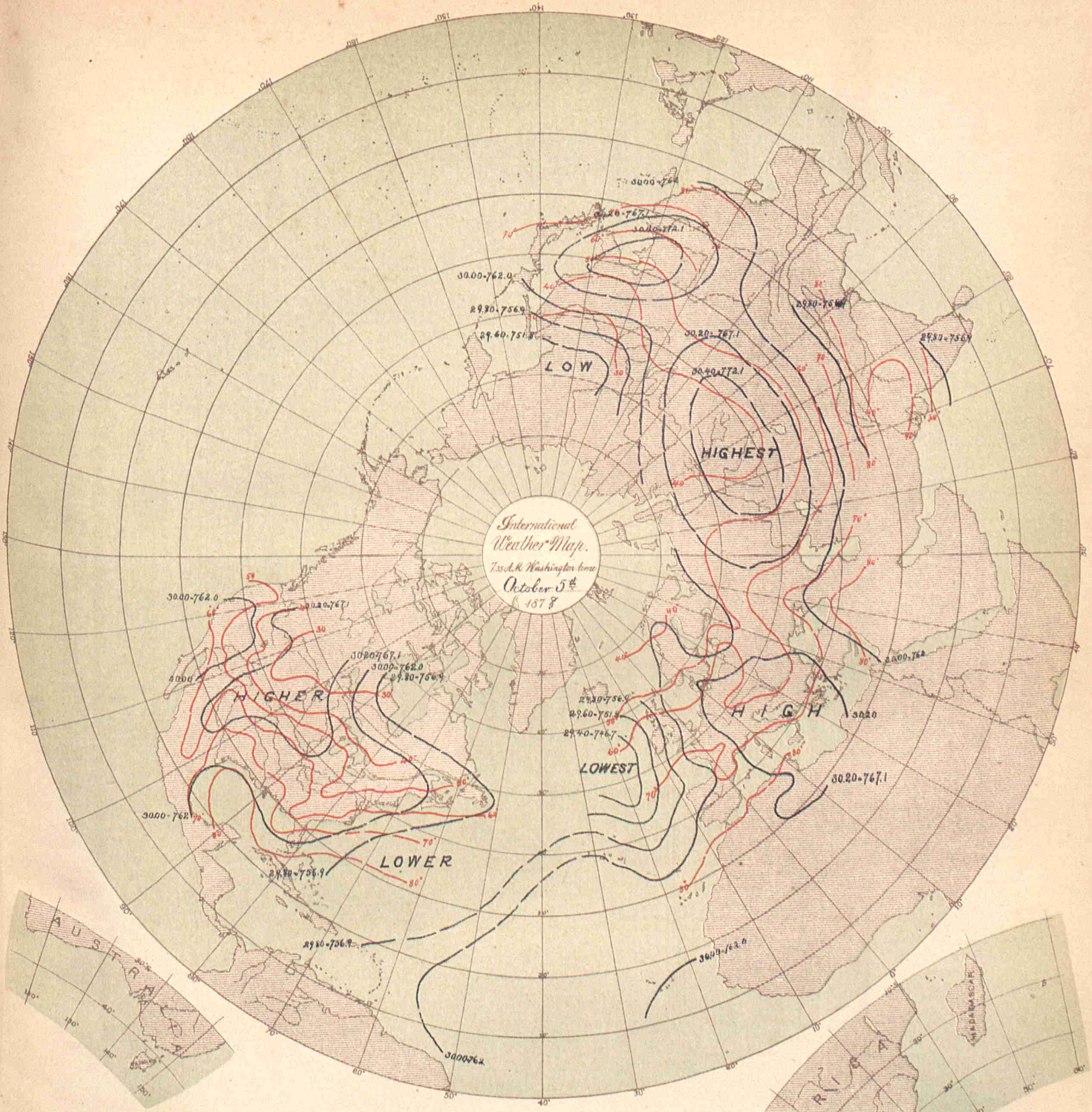
NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; either by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'r 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			Mr. Ansart.
San José	26.25	666.7	29.97	761.2	67.1	19.5	95	Calm			0	6cs				Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.15	765.7	30.19	766.9	52.5	11.4	78	NW			2		1						
Farõe	30.16	766.1	30.18	766.6	54.7	12.6	90	SSE			4		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Farõe)	29.93	760.1	29.96	761.0	46.2	7.9	96	ESE			2		10						Rain and fog
Vestervig	30.03	762.7	30.20	767.0	52.5	11.4	81	Calm			0		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.65	753.2	30.21	767.2	62.2	16.8	75	SE			1		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.03	762.8	30.06	763.5	67.6	19.8	67	NE			2		0			0	0	Clear	Bonvallet, Director.
Avignon, Normal School	30.15	765.9	30.23	767.9	74.5	23.6	55	SSW			1		2		S	0	0	Partly cl'dy	M. Giraud, Director.
Bar-sur-Seine	29.60	751.7	30.14	765.5	68.7	20.4	62	S			1		0			0	0	Clear	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.90	759.5	30.19	766.7	61.7	16.5	63	E			1		0			0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.33	745.0	30.21	767.4	64.8	18.2	82	SSW			2		1		E	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	29.35	745.5	30.28	769.2	70.0	21.1	58	S			1		0			0	0	Clear	M. Marlot, Director.
Bourges, Normal School	29.64	752.8	30.18	766.6	64.4	18.0	86	E			2		2s		E	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.69	754.2	29.94	760.4	74.8	23.8	54	SE			2		4s		SE	0	0		The Staff.
Carcassonne, Normal School	29.69	754.2	30.00	764.3	75.2	24	56	E			4		5	E	E	0	0	Cloudy	Septembre, Director.
Caen	30.05	763.3	30.12	765.1	70.2	21.2	63	SE			4		0			0	0	Very clear	M. Lair, Director.
Chartres, Normal School	29.52	749.8	30.07	763.8	69.4	20.8	92	SSE			2		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.89	759.1	30.20	767.0	69.1	20.6	61	SW			1		1		S	0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.74	720.9	30.03	762.5	77.5	25.3	29	E			1		0			0	0	Clear	Alluard, Director.
Commercy, Normal School	29.35	745.6	30.24	768.0	58.6	14.8	80	NE			1	c		NE		0	0		Dr. Coulet, Director.
Commune de Grèasque*	29.16	740.6	30.30	769.6	75.9	24.4	48	SW			1		5	SW		0	0	½ Covered	M. Kina.
Grenoble, Normal School	29.36	745.8	30.11	764.9	66.6	19.2	76	NW			1		ck		W	0	0		M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.80	756.8	30.10	764.5	65.3	18.5	51	SE			1		2		SE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.27	743.4	30.16	766.1	67.3	19.6	68	NE			1		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	29.95	660.6	30.04	763.1	72.3	22.4	54	SE			3			S	SE	0	0		T. Carré, Director.
Mâcon, Normal School	30.26	768.6	30.29	769.4	59.9	15.5	83	Calm			0		0			0	0	Clear	M. Galxin, Director
Mirecourt, Normal School	29.18	741.1	30.21	767.4	60.4	15.8	75	S			1		2cs		S	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	30.02	762.6	30.22	767.6	78.1	25.6	50	S			1		10		S	0	0	Covered	Boyer, Director.
Privas, Normal School	29.22	742.2	30.27	768.9	68.0	20	64	S			1		2	S	S	0	0	Slightly cl'dy	M. Cantier.
Puy de Dome (Summit)	25.34	643.6			61.2	16.2	49	SE			1		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.06	763.4	30.09	764.2	66.9	32.7	67	E			1		2	E	E	0	0	¼ covered	Lt. Decante, Director.
Rouen, Normal School	30.06	763.4	30.14	765.5	66.5	21.0	49	SE			1		0			0	0	Clear	F. Lucard, Director.
Saint Malo (Port)			30.04	763.1	73 4	23.0	45	SSE			3		1		SE	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	30.00	761.9	30.16	766.1	67.5	19.7	44	SSE			1		1	W		0	0		E. Renou.
Tarbes, Normal School	28.97	735.9	30.01	763.0	60.8	16	79	W			2		5	SW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.47	748.4	30.16	766.0	73.4	23	74	SE			3		2		S	0	0	Slightly cl'dy	M. Gausserand, Director
Sub-Seines.																			
Fort de France, Martinique	29.67	758.6	29.89	759.3	81.0	27.2										1.97	50.		L'Abbé Marchési.
Lyons			30.08	764.0									8			0	0		L. Jays.
Marseilles, Observatory			30.29	767.8	75.7	24.3	53	SW			1		3			0	0		The Staff.
Mont-Louis	25.06	636.6	30.38	771.6	65.5	18.6	17	SSW			3		1		SW	0	0		M. Cave.
Nice			30.27	768.8	69.8	21.0	82	S			1		2			0	0	Slightly cov	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.88	758.9	30.15	765.9	67.6	19.8	42	SE			1		0			0	0		Marié Davy, Director
Perpignan			30.14	765.6	76.5	24.7	60	SE	14.9	6.66			1		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.74	577.6			59.0	15.0		NW			3		5			0	0	Cloudy	Gen'l de Nansouty
Toulouse, Observatory	29.41*	747.1	30.14	765.5	73.2	22.9	52	SSE			6		1			0	0		The Staff.
Tours	29.88	759.0	30.08	764.0	66.7	19.3	54	ESE			1		0			0	0	Almost clear	C. Marquet.
Versailles			30.16	766.0	69.1	20.6	31	SE			1		0			0	0	Very clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.19	766.7	30.21	767.4	63.5	17.5	90	NNE	15.9	7.1			10n			0.051	1.3	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1.010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.33	745.0	30.18	766.6	56.1	13.4	75	SE	.....	.....	1	.....	0	.....	.....	0	0	Foggy	Prof. Dr. Hoh.
Berlin	30.11	764.7	30.28	769.1	63.1	17.3	66	W	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.74	755.5	30.28	769.1	59.7	15.4	48	NW	.....	.....	1	.....	3	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.80	756.9	30.23	767.8	57.2	14.0	78	SE	.....	.....	1	.....	1	.....	.....	0	0	.....	Albert Senx.
Cassel	29.63	752.5	30.24	768.0	60.4	15.8	60	SSW	.....	.....	1	.....	2	SW	.....	0	0	Foggy	Dr. H. Möhl.
Crefeld	30.05	763.2	30.21	767.3	63.5	17.5	58	SE	.....	.....	1	.....	4	.....	.....	0	0	Dust-haze	Director Lose.
Emden	30.24	768.0	30.27	768.9	61.2	16.2	77	S	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.90	759.4	30.26	768.7	66.8	18.8	.....	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.81	731.7	30.25	768.3	55.0	12.8	91	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	M. Wilhelm.
Hamburg	30.17	766.4	30.24	768.2	58.6	14.8	85	WSW	.....	.....	1	.....	7ks	.....	.....	0	0	.....	Captain F. Hegemann.
Kiel	30.22	767.6	30.24	768.0	58.3	14.6	88	WNW	.....	.....	1	.....	10	.....	.....	0.028	0.71	....	Prof. G. Karsten.
Königsberg, (Prussia)	30.05	763.3	30.13	765.4	53.6	12.0	87	W	.....	.....	3	.....	6	.....	.....	0.035	0.9	.....	Prof. E. Luther.
Köslin	.....	.....	30.18	766.5	53.8	12.1	.....	Calm	.....	.....	0	.....	3	.....	.....	0.004	0.1	.....	H. Müller.
Leipsic, Observatory	29.84	757.9	30.26	768.6	61.5	16.4	52	SW	.....	.....	1	.....	3	.....	.....	0	0	.....	Prof. Bruhns.
Memel, Naval School	30.07	763.6	30.11	764.8	51.6	10.9	74	NW	.....	.....	5	.....	10m	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	30.17	766.2	30.18	766 6	56.7	13.7	61	WNW	.....	.....	3	.....	10	.....	.....	0	0	.....	A. Lothes.
Posen	29.98	761.6	30.28	769.0	57.2	14.0	74	W	.....	.....	2	.....	9	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.71	754.5	30.28	768.5	56.7	13.7	82	NE	.....	.....	2	.....	8	.....	.....	0	0	.....	Astronomical Observatory.
Stuttgart	29.27	743.4	30.20	767.1	61.7	16.5	60	NE	.....	.....	1	.....	0	.....	.....	0	0	Dense fog	Prof. Schoder.
Treves, (Trier)	29.68	753.9	30.21	767.3	58.1	14.5	72	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Flesch.
Weissenburg, (Bavaria)	28.73	729.7	30.23	767.9	60.1	15.6	62	WSW	0.7	0.3	.....	.....	1k	SW	.....	0	0	.....	Dr. Von Bebber.
Wustrow, Naval School	30.22	767.6	30.24	768.2	55.0	12.8	80	NNW	.....	.....	2	.....	8s	.....	.....	0	0	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.79	756.6	30.17	766.2	75.2	24.0	.....	NE	.....	.....	1.0	.....	.....	.....	.....	.....	.....	⅛ clear	Dr. J. F. J. Schmidt.
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deesa	29.29	744.0	29.75	755.7	93.0	33.9	44	S	.....	.....	.....	.....	0	.....	.....	0	0	Blue sky	.....
Bombay	29.75	755.7	29.79	756.6	84.4	29.1	85	WSW	8	3.6	.....	.....	10	SSE	SSW	0.56	14.2	Overcast	.....
Poona	27.76	705.1	29.76	755.8	78.0	25.6	70	WNW	.....	.....	.....	.....	10	.....	WNW	0.01	0.3	Thunder	.....
Lahore	28.95	735.4	29.68	754.0	84.6	29.2	44	N	5.9	2.6	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Belgaum	27.30	693.5	29.85	758.2	78.7	23.2	91	WSW	7	3.1	.....	.....	10	.....	W	.....	.....	Drizzling	.....
Roorkee	28.77	730.8	29.66	753.2	86.8	30.4	43	NW	5	2.2	.....	.....	.....	.....	.....	Inap.	Inap.	.....	.....
Agra	29.10	739.2	29.65	753.1	94.6	34.8	39	N	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....
Nagpur	28.67	728.1	29.69	754.1	87.5	30.8	64	Calm	2.4	1.1	.....	.....	2	.....	.....	0	0	D. clouds	.....
Lucknow	29.28	743.7	29.04	752.9	89.2	31.8	58	Calm	0.4	0.2	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Allahabad	29.36	745.6	29.66	753.4	84.5	29.2	67	Calm	0.4	0.2	.....	.....	0	.....	.....	0	0	Blue sky	.....
Patna	29.49	749.1	29.67	753.6	86.6	30.3	67	Calm	0.1	0.04	.....	.....	2	NE	NE	0	0	.....	.....
Hazaribagh	27.70	703.6	29.69	754.1	81.8	27.7	66	NW	3.2	1.4	.....	.....	7	.....	N	0	0	.....	.....
Cuttack	29.61	752.1	29.69	754.2	81.0	27.2	89	SE	1.2	0.5	.....	.....	10	.....	.....	0.04	1.0	Thunder-storm.	.....
Calcutta (Alipore)	29.56	750.8	29.58	751.4	81.3	27.4	89	ENE	0.5	0.2	.....	.....	4	.....	.....	0	0	D. clouds	.....
Goalpara	29.30	744.2	29.68	754.0	83.4	28.6	76	Calm	2.2	1.0	.....	.....	0	.....	.....	0	0	Blue sky	.....
Chittagong	29.68	753.8	29.77	756.1	80.4	26.9	87	SE	2.5	1.1	.....	.....	6	.....	.....	0	0	Misty	.....
Sibsagar	29.37	746.1	29.71	754.6	77.7	25.4	75	ENE	1.8	0.8	.....	.....	10	W	W	0.17	4.3	D. clouds	.....
Jubbulpore	28.33	719.6	29.68	753.8	85.6	29,8	70	Calm	1.8	0.8	.....	.....	2	.....	.....	0	0	D. clouds	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.85	758.3	30.26	768.6	65.1	18.4	51	S	0.7	0.3			2			0	0		Prof. Giovanni Clodig.
Padua	30.14	765.5	30.25	768.3	66.4	19.1	66	SSE	0.7	0.3			0			0	0		Prof. Dott. Lorenzoni
Vicenza	30.05	763.2	30.24	768.0	66.7	19.3	57	E	0	0			1			0	0		Conte Alm. Da Schio.
Bergamo	28.91	734.3	30.22	767.5	67.3	19.6	47	SSW			2		2			0	0		Prof. Trionfini Carlo.
Milan	29.72	754.9	30.24	768.0	61.0	16.1	77	W			2		3			0	0		Prof. Schiaparelli.
Moncalieri	29.33	744.9	30.23	767.7	65.5	18.6	61	WNW	0.7	0.3			0			0	0		Prof. P. F. Denza.
Mondovi	28.32	719.2	30.21	767.2	63.0	17.2	60	N			2		0			0	0		Prof. D. C. Bruno.
Porto Maurizio	30.04	763.1	30.26	768.7	70.3	21.3	62	SSW			2		9	W		0	0		Prof. L. Vassallo.
Genoa	30.08	764.1	30.25	768.3	71.2	21.8	68	SW	4.9	2.2			0			0	0		Prof. G. M. Garibaldi.
Parma	29.94	760.4	30.25	768.4	67.8	19.9	53	WNW			2		1			0	0		Prof. P. Pigorini.
Florence	30.24	768.1	30.26	768.5	70.2	21.2	31	NW			2		0			0	0		Cav. F. Meucci
Leghorn	30.13	765.3	30.21	767.4	68.0	20.0	53	W	2.5	1.1			0			0	0		Prof. P. Monte.
Pesaro																			Prof. Luigi Guidi.
Urbino	28.72	729.5	30.26	768.7	61.0	16.1	35	NE			1		0			0	0		Prof. P. Serpieri
Rome	30.09	764.2	30.26	768.6	72.9	22.7	34	N	0	0			0			0	0		Prof. P. G. S. Ferrari.
Naples, O. U	30.07	763.7	30.26	768.7	73.9	22.7	40	W			2		0			0	0		Prof. L. Palmieri.
Lecce	30.01	762.3	30.26	768.7	66.9	19.4	58	NE	6.3	2.8			6	NW		0	0		Prof. C. De Giorgi.
Cagliari	30.01	762.3	30.20	767.1	75.4	24.1	65	E			2		0			0	0		Prof. A. Pacinotti.
Cosenza	30.15	765.9	30.24	768.1	70.9	21.6	71	SW			1		2			0	0		Prof. F. D. Conti.
Palermo	30.00	762 0	30.25	768.3	72.1	22.3	64	ENE	3.8	1.7			1			0	0		Prof. G. Cacciatore.
Syracuse	30.19	766.7	30.26	768.5	73.6	23.1	70	ESE	7.4	3.3			4	SW		0.110	2.8		Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.																			Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.80	756.9	30.00	762.0	71.9	22.2	88	N	7.5	3.3			10ck;s	N		0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.80	756.9	29.86	758.4	65.3	18.5	97	ENE	8.7	3.9			10n			0.310	7.87	Raining	Prof. P. V. Veeder.
Tokei (Yeddo) University																			

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					64.4	18.0	89	NW			2	10cs	0	N		0.71	1.8	Very cloudy	P. Ceballos.
Guadalajara	25.06	636.4	30.03	762.6	57.2	14.0	70	E			1		5		S	0	0	½ cloudy.	Prof. L. Perez.
Guanajuato																			F. Ortiz.
Leon																			Prof. M. Leal.
Mexico	24.41	620.2	29.97	761.3	60.1	15.6	84	NW			1	0	0			0	0	Blue sky	Central Observatory.
Pabellon, (Aguascalts)	23.10	586.7	30.07	763.7	56.3	13.5	90	NW	1.3	0.6		2c	4k		N	0.04	1.0	Fair	M. V. de Leon, M. E
Puebla																			Prof. B. Gonzalez.
Tlacotalpam					59.5	15.3	81	NW			1	4cs	0			0	0	Clear	M, M. Cházaro.
San Luis Potosi	29.89	759.2	29.90	759.5	73.4	23.0	94	NW				0	10		N	2.907	73.8	Raining	G. Barroeta, M. D.
Vera-Cruz	24.21	614.3	30.14	765.6	55.0	12.8	47	E				4	2	W	E	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	29.96	760.9	29.99	761.6	77.0	25.0	87	NW	15.6	7.0			10n		NE	0.827	21.0	Threatening	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)																			Prof. P. Spina.
Durango	23.20	589.4	29.96	761.2	55.4	13.0	83	NNE	4.5	2.0		0	9		NW	0.276	7.00	Misty	M. V. de Leon, C. E.
Colima	24.21	615.0	30.00	762.0	66.0	18.9	80	NE			1	0	0			0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	28.30	718.8	29.92	760.0	78.8	26.0	76	Calm	0	0		0	8		S	0.148	3.7	Very cloudy	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.21	767.3	30.21	767.3	63.3	17.4		ESE			3					0	0		
Groningen	30.17	766.4	30.23	767.8	59.7	15.4		S			2					0	0		
Helder	30.19	766.8	30.19	766.8	62.4	16.9		S			2					0	0		
Hellevoetsluis	30.20	767.1	30.20	767.1	61.9	16.6	72	E			2								
Utrecht	30.17	766.4	30.22	767.6	61.7	16.5	62	SSE			2		2			0	0	Light clouds	H. v d Bruk.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.10	764.5	30.15	765.9	47.8	8.8	63	NNW	3.4	1.5	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.00	761.9	30.04	762.9	42.4	5.8	76	S	9	4	.....	.....	3	.....	.....	0.055	1.4	.....	
Christiania	30.01	762.3	30.16	766.1	49.6	9.8	51	SSW	7	3	.....	.....	0	.....	.....	0	0	.....	
Tromsö	29.86	758.4	29.90	759.5	33.1	0.6	92	Calm	0	0	.....	.....	10	.....	.....	0.364	9.0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.77	756.1	29.96	760.9	67.6	19.8	79	W	15.0	6.7	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.98	738.7	30.07	763.7	79.7	26.5	39	SSW	8.7	3.9	.....	.....	7	ESE	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.03	762.7	30.11	764.9	73.4	23.0	74	SW	8.7	3.9	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.70	754.3	30.05	763.2	71.6	22.0	75	SW	16.1	7.2	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.93	760.1	30.00	761.9	71.6	22.0	63	WNW	11.2	5.0	.....	.....	4	.....	.....	0.126	3.2	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	Drizzling.	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	.....	.....	Showery	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The Sá da Bandeirá gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	30.07	763.7	30.17	766.3	74.3	23.5	55	S	2.9	1.31	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.95	760.8	30.01	762.2	81.3	27.4	44	SE	4.6	2.05	.....	5	2	W	.....	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.17	690.0	.....	.....	77.0	25.0	58	SE	6.1	2.74	.....	.....	9	.....	.....	0	0	Almost cov.	Domingo Martin y Perez
Madrid, Royal Observatory	27.93	709.5	30.08	764.1	73.8	23.2	53	SW	2.2	1.00	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	30.04	763.0	30.19	766.7	75.6	24.2	67	NE	2.4	1.06	.....	5	5	WSW	.....	0	0	Covered	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.05	737.9	29.93	760.1	67.5	19.7	77	SW	9.9	4.44	.....	.....	10	.....	.....	0	0	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.87	758.8	29.94	760.5	77.2	25.1	86	Calm	0	0	.....	0	1k	.....	.....	Inap.	Inap.	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.02	762.5	30.11	764.9	78.3	25.7	59	ESE	23.2	10.4	.....	0	10	.....	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.87	758.6	29.96	760.9	83.5	28.6	89	S	0	0	.....	6s	2k	S	S	0	0	D. clouds	Leonardo de Toledo, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.95	760.8	29.99	761.8	41.7	5.4	.....	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	29.98	761.5	30.03	762.8	45.3	7.4	59	N	.....	.....	2	.....	7	.....	.....	0	0	.....	
Hernosand	29.56?	750.9?	29.61?	752.2?	49.3	9.6	42	NW	.....	.....	4	.....	3	.....	.....	0.016	0.4	Raining	
Stockholm	29.98	758.0	30.00	763.4	48.2	9.0	48	NW	.....	.....	4	.....	2	.....	.....	0.382	9.7	.....	
Wisby	29.97	761.2	30.03	762.7	48.9	9.4	74	NW	.....	.....	8	.....	10	.....	.....	0.508	12.9	.....	
Sub-Series.																			
Upsala	29.97	761.3	30.05	763.2	49.1	9.5	53	NNW	.....	.....	.....	.....	0	.....	.....	0.055	0.14	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.80	731.4	30.21	767.2	60.1	15.6	77	N	.....	.....	2	.....	0	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.61	726.6	30.22	767.6	61.5	16.4	75	W	.....	.....	1	.....	2	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.0 mm.; Thermometer, +0.8 cent.; Relative Humidity, +8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.19	766.9	64.0	17.8	49	NNE	7	3.0	.....	.....	3	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.27	768.8	68.9	20.5	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.97	761.1	80.4	26.9	63	NW	.....	.....	1	.....	8ks	.....	NW;SE	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.81	757.2	30.11	764.8	46	7.8	.....	SW	1	0.4	.....	0	0	.....	.....	0.01	0.3	Clear	W. R. Bigg.
*Chatham, N B	29.83	757.7	29.89	759.2	49	9.4	96	SW	1	0.4	.....	0	0	.....	.....	0.01	0.3	Clear	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	55	12.8	94	S	4	1.8	.....	.....	10ks	.....	S	0.025	0.64	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.86	758.4	30.06	763.5	44.3	6.8	94	W	.....	.....	1	0	0	.....	.....	0.195	4.96	Clear	James Smith, M. A.
Dalhousie, N. B	29.77	756.1	29.92	760.0	47	8.3	86	NW	.....	.....	1	.....	.....	.....	.....	0.32	8.1	Light rain	H. A. Johnson.
Esquimault, B. C	29.96	761.0	30.01	762.2	49.3	9.6	100	Calm	.....	.....	.....	.....	10s	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.95	760.7	29.97	761.2	46	7.8	88	SE	4	1.8	.....	0	2s	.....	Calm	0.39	9.9	Clear	J. McWilliams.
Fredericton, N. B	29.90	759.4	29.97	761.2	48.3	9.1	84	NW	11	4.9	.....	0	s	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	29.27	743.4	30.13	765.3	28	— 2.2	97	W	4	1.8	.....	5ks	2ks	NW	Calm	0	0	Fair	James Stewart.
Granton, Ontario	29.00	736.6	30.13	765.3	41	5.0	100	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.72	754.9	29.85	758.2	50	10.0	97	NW	1	0.4	.....	8cs	0	.....	.....	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.79	756.7	30.16	766.1	47.3	8.5	84	SW	.....	.....	1	10ck	0	SW	.....	0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	29.78	756.4	29.80	756.9	53	11.7	90	NW	.....	.....	1	.....	10	.....	.....	0.37	9.4	Overcast	E. Weedon.
*Kingston, Ontario	29.78	756.4	30.12	765.0	46	7.8	88	N	1	0.4	.....	0	0	.....	.....	0.09	2.3	Clear	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	W	4	1.8	.....	4k	0	W	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.87	758.7	30.07	763.8	48	8.9	80	SW	8	3.6	.....	0	2s	.....	.....	Inap.	Inap.	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.39	746.5	30.10	764.5	43	6.1	98	W	3	1.3	.....	2cs	2ks	W	W	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.42	747.3	30.13	765.3	43	6.1	94	NW	3	1.3	.....	10k	0	W	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.82	757.4	29.86	758.4	56.5	13.6	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.46	748.3	30.12	765.0	44	6.7	84	N	2	0.9	.....	.....	10n	.....	W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.72	754.9	30.04	763.0	43	6.1	83	W	.....	.....	1	0	0	.....	.....	0.07	1.8	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.62	752.3	30.09	764.3	39	3.9	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.04	1.0	Foggy	W. H. McIntyre.
St. Andrews, N. B	29.90	759.4	29.95	760.7	50	10.0	74	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	29.78	756.4	29.95	760.7	51	10.6	79	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.10	764.5	46	7.8	84	S	11	4.9	.....	.....	10ks	.....	W	0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.33	745.0	30.13	765.3	43	6.1	92	Calm	0	0	.....	.....	10n	.....	W	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.83	732.3	30.14	765.5	40.0	4.4	99	Calm	0	0	.....	0	10s	.....	.....	0	0	Overcast	C. J. MacGregor, M. A
*Sydney, C. B	29.85	758.2	29.88	758.9	56	13.3	81	SW	1	0.4	.....	2c	5ks	.....	NE	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.75	755 6	30.14	765.5	47	8.3	89	NW	1	0.4	.....	.....	10n	.....	W	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	52.0	11.1	93	S	.....	.....	.....	5k	5s	.....	.....	0.10	2.5	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,075 feet, or 309.4 meters; Stratford, 1.182 ft.. or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.64	757.9	30.07	763.8	49	9.4	78	NW	4	1.8		0	0			0	0	Clear	
Alpena, Michigan	29.40	746.7	30.06	763.5	43	6.1	83	W	3	1.3		5cs	2s	SW	Calm	0.03	0.8	Fair	
Atlanta, Georgia	28.94	735.1	30.06	763.5	65	18.3	63	Calm			0	0	Sm'e		Calm	0	0	Clear	
Atlantic City, New Jersey	30.04	763.0	30.06	763.5	56	13.3	68	N	15	6.7		0	0			0	0	Clear	
Augusta, Georgia	29.93	760.2	30.12	765.0	59	15.0	88	NW	3	1.3		0	Haze			0	0	Clear	
Baltimore, Maryland	30.06	763.5	30.11	764.8	57	13.9	63	N	4	1.8		Haze	Sm'e	Calm	Calm	0	0	Smoky	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	55	12.8	74	N	13	5.8		0	0			0	0	Clear	
Bismarck, Dakota	28.34	719.8	30.20	767.1	31	—0.6	79	Calm	0	0		5cs	0	Calm		0	0	Fair	
Boerne, Texas	28.60	726.4			72	22.2	80	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.31	693.7	30.27	768.8	37	2.8	80	NW	8	3.6		5k	0	Calm		0	0	Fair	
Boston, Massachusetts	29.89	759.2	30.05	763.3	54	12.2	61	N	7	3.1		4cs	Haze	Calm	N	0	0	Hazy	
Brackettville, Texas	28.90	734.0	29.90	759.4	74	23 3	86	E	5	2.2		0	5s		SE	0	0	Fair	
Breckenridge, Minnesota	29.15	740.4	30.19	766.8	35	1.7	80	W	11	4.9		5k	0	W		0	0	Fair	
Brownsville, Texas	29.93	760.2	30.00	762.0	73	22 8	90	Calm	0	0		5k	0	Calm		0	0	Fair	
Buffalo, New York	29.40	746.7	30.11	764.8	46	7.8	77	NE	4	1.8		1ck	0	W		0	0	Clear	
Burkes, Arizona					65	18.3	44	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.86	758.4	30.12	765.0	52	11.1	75	N	3	1.3		0	Haze		Calm	Inap.	Inap.	Clear	
Cairo, Illinois	29.64	752.8	30.02	762.5	62	16.7	72	N	8	3.6			10s		W	0	0	Cloudy	
Camp Apache, Arizona					49	9.4	50	W			1	0	5ks		Calm	0	0	Fair	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	66	18.9	28	W			1	5c	2s	Calm	Calm	0	0	Cloudy	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	49	9.4	44	NW			1	0	0			0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	37	2.8	71	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.99	761.7	30.00	762.0	68	20.0	60	NE	20	8.9		8cs	0	SW		0	0	Fair	
Cape Henry, Virginia	30.00	762.0	30.02	762.5	65	18.3	84	N	22	9.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.00	762.0	30.02	762.5	66	18.9	69	N	17	7.6		0	0			0	0	Clear	
Cape May, New Jersey	30.04	763.0	30.06	763.5	57	13.9	57	N	18	8.0		0	0			0	0	Clear	
Castroville, Texas	29.23	742.4	29.91	759.7	71	21.7	95	Calm	0	0		0	2s		Calm	0	0	Fair	
Charleston, South Carolina	30.06	763.5	30.12	765.0	65	18.3	68	N	5	2.2		0	0			0	0	Clear	
Cheyenne, Wyoming	24.23	615.4	30.17	766.3	23	— 5.0	86	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.46	748.3	30.15	765.8	54	12.2	80	SW	6	2.7			5s;fg		Calm	0	0	Cloudy	
Cincinnati, Ohio	29.40	749.0	30.14	765.5	56	13.3	75	NE	5	2.2			10ks		W	0.02	0.5	Threatening	
Cleveland, Ohio	29.42	747.3	30.15	765.8	48	8.9	85	S	4	1.8			10s		SW	0	0	Threatening	
Coleman City, Texas	28.25	717.5	29.87	758.7	68	20.0	84	W	4	1.8			10n		W			Light rain	
Columbus, Ohio	29.27	743.4	30.10	764.5	53	11.7	73	NE	3	1.3		10cs	Fog	Calm	Calm	0	0	Cloudy	
Concho, Texas	28.18	715.8	29.80	756.9	68	20.0	60	NW	16	7.2		10k	0	NW		0	0	Cloudy	
Corsicana, Texas	29.57	751.1	30.03	762.7	64	17.8	83	SE	2	0.9		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.60	751.8	30.25	768.3	50	10.0	86	N	8	3.6			10n		Calm	0.02	0.5	Light rain	
Decatur, Texas	29.01	736 8	30.17	766.3	65	18.3	94	N	14	6.3			10s			0	0	Threatening	
Denison, Texas	29.26	743 2	30.04	763.0	67	19.4	74	NW	6	2.7		0	8ks		NW	0	0	Threatening	
Denver, Colorado	25.04	635.0	30.26	768.6	37	2.8	63	S	6	2.7		0	0			0	0	Clear	
Des Moines, Iowa	29.36	745.7	30.25	768.3	50	10.0	86	SW	3	1.3		0	8s		SW	0.05	1.3	Cloudy	
Detroit, Michigan	29.45	748.0	30.12	765.0	49	7.8	77	W	4	1.8			10s		Calm	0	0	Cloudy	
Dodge City, Kansas	27.68	703.1	30.02	762.5	49	9.4	100	NE	12	5.4			10n		NE	0.06	1.5	Light rain	
Dubuque, Iowa	29.53	750.0	30.24	768.1	52	11.1	73	SW	6	2.7			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.45	748.0	30.14	765.5	40	4.4	85	W	6	2.7		0	0			0	0	Clear	
Eagle Pass, Texas	29.26	743.2	29.98	761.5	68	20.0	95	E	2	0.9		0	0			0	0	Clear	
Eastport, Maine	29.89	759.2	29.96	761.0	53	11.7	67	NW	5	2.2		0	Haze		Calm	0	0	Clear	
Edinburg, Texas					67	19.4	95	Calm			0		Fog		Calm	0	0	Foggy	
El Paso, Texas					77	25.0	42	Calm	0	0		0	0			0	0	Clear	
Erie, Pennsylvania	29.40	746.7	30.11	764.8	50	10.0	79	S	7	3.1		5ck	0	W		0	0	Fair	
Escanaba, Michigan	29.43	747.5	30.10	764.5	39	3.9	73	W	7	3.1			0			Inap.	Inap.	Clear	
Florence, Arizona	28.40	721.3	30.00	762.0	62	16.7	46	N			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.61	650.5	29.67	753.6	60	15.6	39	NE	7	3.1		8k	0	Calm		0	0	Fair	
Fort Davis, Texas	25.29	642.4	30.25	768.3	66	18.9	48	NE	3	1.3		2k	0	NE		0.06	1.5	Fair	
Fort Gibson, Indian Ter	29.60	751.8	30.12	765.0	63	17.2	100	N	3	1.3			10n		N	0.77	19.6	Light rain	
Fort Griffin, Texas	28.84	732.5	30.09	764.3	63	17.2	83	N	16	7.2			10s		N	0.18	4.6	Cloudy	
Fort McKavett, Texas	27.88	708.1	29.75	755.6	68	20.0	74	NW	1	0.4			10s			0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.90	734.0	29.99	761.7	60	15.6	88	N	20	8.9			10s		N	0.50	12.7	Cloudy	
Fredericksburg, Texas	28.30	718.8	29.81	757.2	75	23.9	72	Calm			0	0	8ks		Calm	0	0	Cloudy	
Galveston, Texas	29.96	761.0	30.00	762.0	78	25.6	78	SE	4	1.8		5k	0	SE		0	0	Clear	
Graham, Texas	28.97	735.8	30.00	762.0	65	18.3	84	N	16	7.2			10ks		NW	0.35	8.9	Cloudy	
Grand Haven, Michigan	29.15	740.0	30.09	764.3	58	14.4	82	N	6	2.7			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.36	745.7	30.14	765.5	53	11.7	67	NW	4	1.8			10n		Calm	0.02	0.5	Light rain	
Indianola, Texas	29.99	761.7	30.02	762.5	76	24 4	77	SE	2	0.9		0	0			0	0	Clear	
Jacksboro, Texas	29.38	746.2	30.52	775.2	63	17.2	83	W	20	8.9			10s		N	0.04	1.0	Cloudy	
Jacksonville, Florida	30.04	763.0	30.06	763.5	66	18.9	74	N	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.60	751.8	30.22	767.6	52	11.1	79	NE	9	4.0			10s		Calm	Inap.	Inap.	Cloudy	
Key West, Florida	29.92	760.0	29.96	761.0	79	26.1	78	NE	16	7.2		6c;k	1ks	W;NE	Calm	0.01	0.3	Fair	
Kittyhawk, North Carolina	29.98	761.5	30.00	762.0	69	20.6	61	NE	33	14.8		0	0			0	0	Clear	
Knoxville, Tennessee	29.12	739.6	30.13	765.3	50	10.0	86	Calm	0	0		0	Sm'e			0	0	Clear	
La Crosse, Wisconsin	29.40	748.3	30.20	767.1	47	8.3	77	SW	2	0.9		0	0			0	0	Clear	
La Mesilla, New Mexico	28.11	663.2	30.26	768.6	57	13.9	63	NE	1	0.4		8c	0	SW		0	0	Cloudy	
Laredo, Texas	29.56	750.6	29.88	758.9	74	23.3	86	SE	3	1.3		0	0			0	0	Clear	
Lead City, Dakota	24.97	634.2	30.24	768.1	35	1.7	53	S	11	4.9		0	0			0	0	Clear	
Leavenworth, Kansas	29.37	746.0	30.22	767.6	51	10.6	79	NE	7	3.1			10ks		Calm	0.37	9.4	Cloudy	
Los Angeles, California	29.59	751.6	29.93	760.2	56	13.3	90	Calm	0	0			Fog		Calm	0	0	Foggy	
Louisville, Kentucky	29.51	749.5	30.06	763.5	58	14.4	64	N	6	2.7		5ck	Sm'e	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.44	747.8	30.12	765.0	55	12.8	73	Calm	0	0		0	0			0	0	Clear	
Madison, Wisconsin	29.19	741.4	30.18	766.8	51	10.6	72	NW	6	2.7			10s		W	0	0	Cloudy	
Marquette, Michigan	29.32	744.7	30.03	762.7	45	7.2	68	SW	12	5.4		2k	0	SW		Inap.	Inap.	Fair	
Mason, Texas	28.39	721.1	30.10	764.5	69	20.6	79	Calm	0	0		5ck	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	29.74	755.4	30.09	763.5	63	17.2	58	NW	4	1.8			10ks		SW	0	0	Cloudy	
Milwaukee, Wisconsin	29.41	747 0	30.14	765.5	51	10.6	65	W	9	4.0		0	8s		Calm	0	0	Fair	
Mobile, Alabama	30.02	762.5	30.06	763.5	75	23.9	72	SE	8	3.6		0	0			0	0	Clear	
Montgomery, Alabama	29.87	758.7	30.10	764.5	62	16.7	66	SE	1	0.4		Haze	0	Calm		0	0	Clear	
Morgantown, West Virginia	29.04	737.6	30.10	764.5	50	10.0	86	N	1	0.4			10s;fg		Calm	0	0	Cloudy	
Mt. Washington, N. H.	23.76	603.5	30.12	765.0	27	— 2.8	88	NW	13	5.8		0	2k		NW	0.03	0.8	Clear	
Nashville, Tennessee	29.53	750.0	30.05	763.3	62	16.7	83	Calm	0	0			10s		N	0	0	Cloudy	
New Haven, Connecticut	29.96	761.0	30.07	763.8	56	13.3	69	NE	5	2.2		0	0			0	0	Clear	
New London, Connecticut	30.01	762.2	30.06	763.5	56	13.3	69	N	4	1.8		0	2s		W	0	0	Fair	
New Orleans, Louisiana	29.96	761.0	30.01	762.2	74	23.3	81	Calm	0	0		0	Haze		Calm	0	0	Clear	
Newport, Rhode Island	29.98	761.5	30.03	762.7	54	12.2	74	N	7	3.1		6cs;ck	0	SW		0	0	Fair	
New York, New York	29.99	759.4	30.08	764.0	56	13.3	62	NW	7	3.1		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	30.00	762.0	30.05	763.3	67	19.4	60	NE	11	4.9		Haze	Haze			0	0	Hazy	
North Platte, Nebraska	27.40	696.0	30.09	764.3	33	0.6	97	NE	4	1.8			Fog		Calm	0.07	1.8	Foggy	
Olympia, Washington Ter.	30.02	762.5	30.06	763.5	50	10.0	93	S	1	0.4			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	29.15	740.4	30.24	768.1	49	9.4	78	S	3	1.3		5k	2s	NW	Calm	Inap.	Inap.	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.82	757.4	30.14	765.5	50	10.0	80	N	1	0.4	.....	0	8ks	.....	NW	0	0	Fair	
Pembina, Dakota	29.24	742.7	30.11	764.8	28	— 2.2	88	SE	3	1.3	.....	0	8s	.....	NW	0	0	Fair	
Philadelphia, Pa	30.07	763.8	30.12	765.0	58	14.4	53	N	8	3.6	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.73	729.7	.....	.....	68	20.0	42	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.97	454.8	30.18	766.6	23	— 5.0	47	NW	8	3.6	.....	0	0	.....	.....	0.05	1.3	Clear	
Ploche, Nevada	24.19	614.4	29.96	761.0	48	8.9	23	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.29	744.0	30.11	764.8	46	7.8	92	N	1	0.4	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Port Huron, Michigan	29.44	747.8	30.12	765.0	45	7.2	76	W	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Maine	29.98	761.5	30.03	762.7	55	12.8	68	N	6	2.7	.....	1k	Haze	Calm	.....	0	0	Clear	
Portland, Oregon	30.05	763.3	30.16	766.1	46	7.8	84	NE	3	1.3	.....	0	8s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.82	630.4	30.18	766.6	47	8.3	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.30	744.2	30.12	765.0	65	18.3	94	N	8	3.6	.....	.....	10n	.....	N	.....	.....	Light rain	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	73	22.8	76	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.59	751.6	29.95	760.7	59	15.0	54	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.84	757.9	30.06	763.5	76	24.4	69	SE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.50	749.3	30.13	765.3	46	7.8	77	SW	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Roseburg, Oregon	29.53	751.6	30.18	766.6	41.5	5.3	96	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.86	758.4	29.94	760.5	55	12.8	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.61	752.1	30.20	767.1	51	10.6	93	NE	16	7.2	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
St. Marks, Florida	30.07	763.8	30.09	764.3	67	19.9	87	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.33	745.0	30.18	766.6	41	5.0	83	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.79	655.0	30.12	765.0	44.0	6.7	52	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.32	744.7	29.89	759.2	72	22.2	95	NW	2	0.9	.....	.....	10s	.....	E	0	0	Cloudy	
San Diego, California	29.87	758.7	29.94	760.5	61	16.1	94	N	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.49	749.0	30.16	766.1	56	13.3	87	W	10	4.5	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Sandy Hook, New Jersey	30.05	763.3	30.08	764.0	58	14.4	64	N	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.91	759.7	29.97	761.2	54	12.2	93	W	4	1.8	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Santa Fé, New Mexico	23.43	595.1	29.97	761.2	43	6.1	51	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.01	762.2	30.10	764.5	64	17.8	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	64	17.8	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.35	618.5	.....	.....	55	12.8	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.05	763.3	30.09	764.3	63	17.2	57	N	8	3.6	.....	0	5s	.....	Calm	0	0	Fair	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	53	11.7	73	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.03	686.6	30.03	762.7	65	18.3	53	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.99	761.7	30.04	763.0	55	12.8	75	N	10	4.5	.....	1k	0	Calm	.....	0	0	Clear	
Toledo, Ohio,	29.43	747.5	30.11	764.8	53	11.7	73	SE	3	1.3	.....	1c	0	Calm	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	68	20.0	38	SE	7	3.1	.....	.....	10s	.....	SE	0.06	1.5	Cloudy	
Tybee Island, Georgia	30.06	763.5	30.09	764.3	71	21.7	62	NE	12	5.4	.....	8c	0	SE	.....	0	0	Fair	
Umatilla, Oregon	29.75	755.6	.....	.....	47	8.3	77	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	32	0.0	100	Calm	.....	.....	0	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.11	739.4	29.91	759.7	70	21.1	85	NE	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear	
Vicksburg, Mississippi	29.81	757 2	30.06	763.5	67	19.4	79	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.36	618.7	29.84	757.9	38	3.3	45	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Clear	
Visalia, California	29.60	751.8	29.97	761.2	56	13.3	75	SE	3	1.3	.....	0	0	.....	.....	0	0	Cloudy	
Washington, D. C	30.00	762.0	30.11	764.8	57	13.9	69	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.99	761.7	30.07	763.8	60	15.6	60	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	35	1.7	53	NE	8	3.6	.....	2cs	0	Calm	.....	0	0	Fair	
Wood's Holl, Mass	29.99	761.7	30.04	763.0	57	13.9	69	N	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
Yankton, Dakota	29.00	736.6	30.35	770.9	36	2.2	80	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.64	762.8	29.80	756.9	66	18.9	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.65	753.1	29.70	754.4	24.0	— 4.4	100	W	20	8.9	.....	.....	10n	.....	W	0.05	1.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.92	760.0	29.94	760.5	80	26.7	78	E	24	10.7	.....	0	2ks	.....	E	.....	.....	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.88	758.9	29.90	759.4	79	26.1	82	Calm	0	0	.....	0	2k	.....	.....	Blank	Blank	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	86	30.0	83	SE	4	1.8	.....	2c	5ks	E	.....	0.03	0.8	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	80	26.7	91	Calm	0	0	.....	2c	2ks	Calm	.....	1.24	31.5	.....	James Gall.
Navassa, W. I	29.82	757.4	29.90	759.4	81	27.2	.....	SE	11.7	5.2	.....	.....	.....	.....	.....	0.22	5.6	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	84	28.9	73	E	2	0.9	.....	4c	5k	E	.....	0.160	4.06	Fair	C. J. Hering
Medellin, Colombia, S. A	25.22	640.6	.....	.....	67.0	19.4	82	SW	1	0.4	.....	2cs	5s; ks	.....	.....	0.54	13.7	.....	Thomas Herran
Portland, Jamaica, W. I	29.73	755.1	30.04	763.0	73	22.8	90	S	.....	.....	2	.....	.....	.....	.....	.....	.....	Hazy	Robert Elworthy.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,550 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.30	769.6	.78	*25.6	78	25.6	65	E	22	9.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
NavyYard,Portsmouth,N.H	29.92‡?	760.0‡?	.....	.....	53	11.7	73	W	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.85*	758.2*	72	22.2	67.5	19.7	95	E	.....	.....	4	.....	10n	.....	E	Inap.	Inap.	.....	.....	Light rain...	
Adams, S. 43° 56′, W. 97° 18′	29.42	747.3	60	15.6	46	7.8	92	S	.....	.....	4–5	.....	8	.....	SW	Blank	Blank	Long	S	Cloudy	
Alaska, Valparaiso, Chili	30.12	765.0	64	17.8	58	14.4	82	Calm	.....	.....	0	.....	8	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance, N. 38° 05′, E. 24° 39′	30.21‡	767 3‡	.....	.....	68	20.0	54	NE	.....	.....	3	.....	2	.....	N;E	.....	.....	Light	E	Hazy.....	
Ashuelot, N. 34° 40′, E. 135° 13′	30.03	762.7	77	25.0	73	22.8	76	N	.....	.....	4	.....	10	.....	.....	.....	.....	Smooth	.....	Drizzling.....	
Canonicus, New Orleans, La	30.04	763.0	54	12.2	74	23.3	90	E	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.08‡	764.0‡	.....	.....	60	15.6	60	NNW	8	3.6	.....	.....	5	.....	NNE	0	0	.....	.....	Foggy	
Constitution, Havre, France	.....	.....	.....	.....	63	17.2	100	E	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Despatch, Volo, Turkey	30.21‡	767.3‡	.....	.....	75	23.9	44	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, S. 35° 30′, W. 27° 47′	29.67	753.6	68	20.0	60	15.6	100	NNW	.....	.....	4	.....	10	.....	NW	.....	.....	Rough	N	Cloudy	
Franklin, Norfolk, Va.	30.11	764.8	70	21.1	68	20 0	70	N	6	2.7	.....	.....	2	.....	N	0	0	.....	.....	Clear.....	
Gettysburg Valetta, Malta	30.18‡	766.6‡	.....	.....	78	25.6	95	Var.	.....	.....	1	.....	2	.....	Calm	0	0	Smooth	.....	Clear	
Guard, S. 16° 15′, W. 36° 47′	30.07	763.8	79	26.1	81	27.2	68	NE	.....	.....	3	.....	5	.....	ENE	.....	.....	Long	E	Fair.....	
Hartford, Rio de Janeiro, Brazil	30.13	765.3	.....	.....	71	21.7	80	SE	9.6	4.3	.....	.....	8	.....	WNW	0	0	.....	.....	Fair	
Marion, N. 41° 53′, E. 16° 23′	30.28	769.1	69	20.6	69	20.6	70	NW	.....	.....	3	.....	2	.....	NW	0	0	Smooth	NW	Fair.....	
Michigan, Erie, Pa	30.02†	762.5†	.....	.....	49	9.4	71	SE	.....	.....	3	.....	2	.....	SW	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.85‡	758.2‡	.....	.....	68	20.0	95	ENE	.....	.....	3–4	.....	10	.....	ENE	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.	30.24	768.1	71	21.7	69	20.6	65	N	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru	30.08†	764.0†	.....	.....	62	16.7	83	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.46	773.7	52	11.1	48	8.9	70	W	.....	.....	2	.....	8	.....	E	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C.	.....	.....	.....	.....	58	14.4	100	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth, Portsmouth, N. H.	30.08	764.0	55	12.8	53	11.7	80	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Clear	
Powhatan, Portsmouth, N. H.	30.01‡	762.2‡	.....	.....	58	14.4	58	NW	3.6	1.6	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Ranger, Hong-Kong, China	30.01	762.2	85	29.4	85	29.4	83	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas	29.96	761.0	74	23.3	74	23.3	95	E	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.04‡	763.0‡	.....	.....	63	17.2	57	NNW	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Philadelphia, Pa.	30.02	762.5	.....	.....	55	12.8	68	NW	.....	.....	1	.....	2	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.00	762.0	60	15.6	63	17.2	62	NNE	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France	30.17	766.3	65	18.3	68	20.0	70	SE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Hazy.....	
Swatara, Boston, Mass.	30.04‡	763.0‡	.....	.....	55	12.8	74	NNW	.....	.....	3	.....	2	.....	.....	.....	.....	.....	.....	Hazy.....	
Trenton, N. 40° 56′, W. 12° 13′	29.90‡	759.4‡	.....	.....	69	20.6	95	S	.....	.....	4	.....	8	.....	S	0.4	10.	Smooth	.....	Squally.....	
Tuscarora, N. 23° 45′, W. 111° 15′	29.68	753.9	81	27.2	82	27.8	71	NW	.....	.....	3	.....	0	.....	.....	0	0	Mod'ate	NW	Clear.....	
Vandalia, Cartagena, Spain	30.18‡	766.6‡	.....	.....	75	23.9	64	NE	.....	.....	2	.....	5	.....	ENE	.....	.....	.....	.....	Fair.....	
Wabash, Boston, Mass.	.....	.....	.....	.....	53	11.7	67	NW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Fair.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. Alaska																			
S. S. China																			
S. S. City of New York																			Capt. Berry.
S. S. City of Panama																			Capt. Cobb.
S. S City of Peking, N. 36° 09′, W. 141° 28′		30.32*	770.1*	67	19.4	79	SW			2		10		SW		Smooth		Overcast	Capt. Seabury.
S. S. City of Sydney																			Capt. Cavarly.
S. S. City of Tokio																			Capt. Dearborn.
S. S. Colima, N. 8° 55′, W. 79° 31′		29.96*	761.0*	81	27.2	96	E			2		8		NE	Blank			Misty	Capt. Maury.
S. S. Costa Rica																			Capt. Searle.
S. S. Dakota, Tacoma, W. T.		30.08*	762.7*	53	11.7	80	NNW			2		0			0			Hazy	Capt. Whitebury.
S. S. Georgia																			Capt. Morse.
S. S. Grenada																			Capt. Connolly.
S. S. Wilmington																			Capt. Austin.
S. S. Zealandia																			Capt. A. Fuller.
																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 51° 24′, W. 15° 2′		29.60*	751.8*	60	15.6	100	SW			4		5k		SW	Blank	Mod'ate	SSW	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 40° 52′, W. 143° 29′		30.16*	766.1*	68	20.0	84	SSE			4		ks		S		Smooth	S	Misty	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 35° 30′, E. 148° 15′		29.75	755.6	77	25.0	82	SSW			4		4		SW		2	SE	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 44° 21′, W. 54° 13′		29.76	755.9	60	15.6	76						10		N	0	1	NW	Foggy	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 51° 45′, W. 24° 56′		29.31*	744.5*	67	19.4	95	ESE			1		9		ENE	0	Heavy		Hazy	Captain Sargent.
S. S. Ohio, N. 41° 14′, W. 66° 05′		29.93	760.2	61	16.1	88	NE			2		10?		NNE	0	Small	S	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Illinois and Pennsylvania give the cloud directions as toward instead of from. *Anerold; corrected for temperature and elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 15° 28′, W. 65° 40′		29.89	759.2	87	30.6	76	E	8	3.6		2c	2k		E	0.04 in or 1.0 mm.	Rough	SE	Clear	Capt. James Jorgensen.

NOTE.—The originals for the Schooner Addie Fuller give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 6, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. Ollive.
Nemours	.....	.....	30.09	764.3	78.3	25.7	70	NNW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Kesxuche.
Algiers	.....	.....	30.04	763.1	84.9	29.4	50	Calm	.....	.....	0	.....	4	.....	.....	0	0	Cloudy	Tourillere.
La Calle	.....	.....	30.11	764.9	77.2	25.1	75	E	.....	.....	3	.....	2	.....	.....	0	0	Fair	Foufrede.
Tunis	.....	.....	30.13	765.2	82.4	28.0	72	ESE	.....	.....	5	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.26	768.5	82.4	28.0	.....	W	.....	.....	5	.....	6	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	30.08	764.0	82.4	28.0	33	S	.....	.....	5	.....	4	.....	.....	0	0	Cloudy	Herbin.
Tebessa	.....	.....	30.14	765.5	77.9	25.5	39	W	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair	Watrin.
Geriville	.....	.....	30.10	764.6	71.6	22.0	58	SE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Brugnlaux.
Laghouat	.....	.....	30.24	768.1	73.4	23.0	54	SSE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Bertrand.
Biskra	.....	.....	30.23	767.9	88.7	31.5	35	ESE	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.67	753.6	30.21	767.4	62.6	17.0	58	.....	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.42	747.3	30.18	766.6	60.1	15.6	77	E	.....	.....	1	.....	5	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.37	746.0	30.25	768.3	59.0	15.0	70	Calm	.....	.....	0	.....	9s	.....	S	0	0	.....	Julius Mikolik.
Gratz	29.01	736.8	30.26	768.4	58.5	14.7	76	NW	.....	.....	2	.....	6	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.73	729.8	30.23	767.7	59.1	15.4	59	NW	.....	.....	1	.....	4	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.79	731.3	30.12	765.1	57.9	14.4	78	ENE	.....	.....	3	.....	0	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	29.25	742.9	30.24	768.1	53.6	12.0	62	NE	.....	.....	1	.....	4	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	30.09	764.3	30.20	767.1	66.6	19.2	68	WNW	.....	.....	2	.....	0	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.87	758.6	30.33	770.4	58.5	14.7	61	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.97	761.1	30.24	768.2	59.4	15.2	69	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	Karl Stancel.
Trieste	30.14	765.5	30.24	768.1	65.7	18.7	80	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	P. Busin.
Vienna	29.54	750.2	30.25	768.3	60.3	15.7	73	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 348.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.55	725.2	30.04	763.1	59.5	15.3	75	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.74	755.3	29.93	760.3	64.8	18.2	72	SSW	.....	.....	3	10	.....	WSW	.....	0	0	.....	Royal Observatory
Furnes	29.90	759.6	29.93	760.1	63.1	17.3	80	SSE	.....	.....	3	.....	9	.....	.....	0.008	0.2	Light fog	M. E. de Cae.
Maeseyck	29.88	759.0	30.01	762.3	66.6	19.2	73	SE	.....	.....	2	.....	8	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

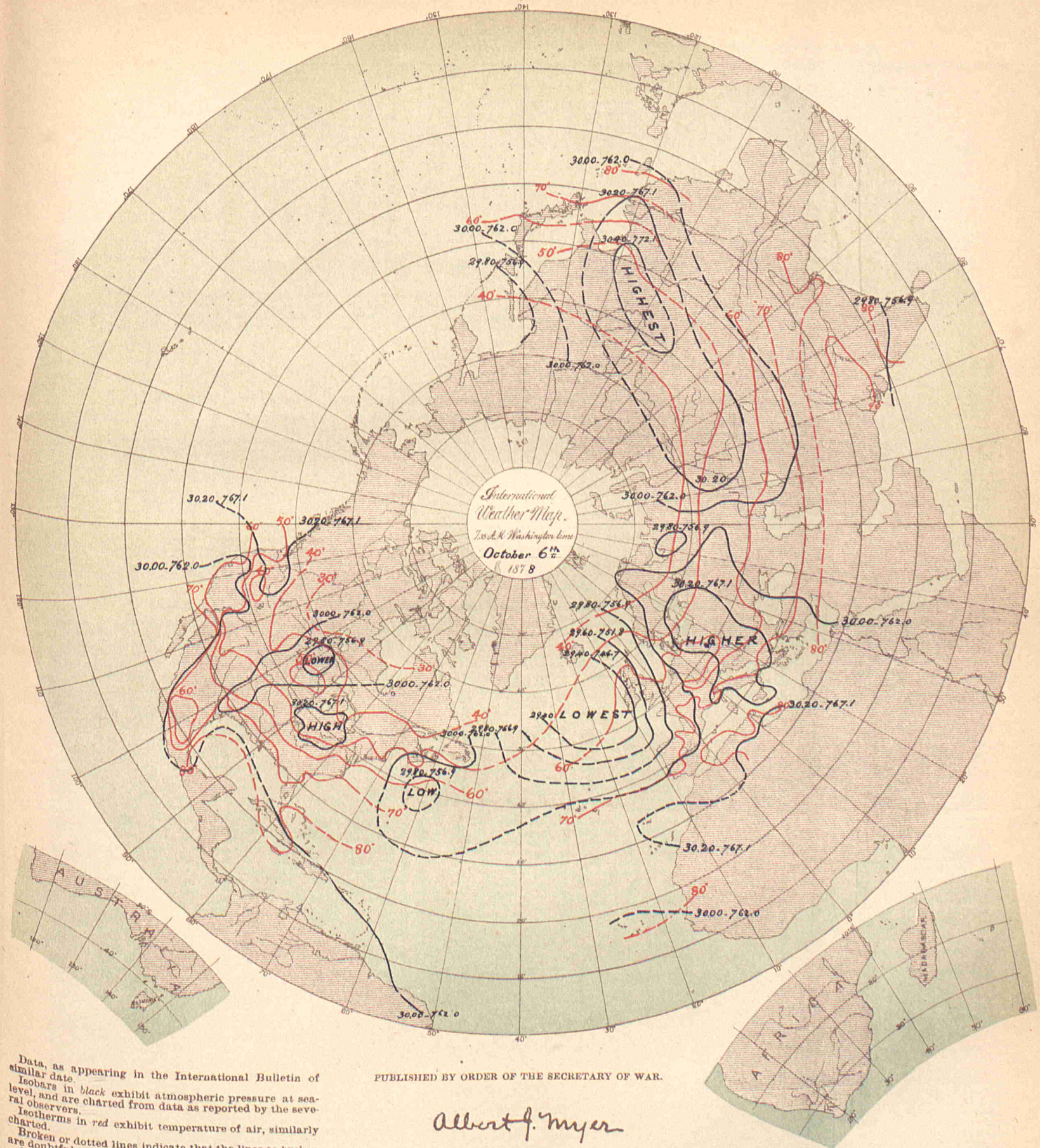
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Aberdeen	29.53	750.0	29.63	752.6	57.0	13.9		S	15	6.7			9			0.035	0.89	Squally	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			29.49	749.0	63.1	17.3		SSE	16	7.2									S. Call.
Bidston, (Liverpool Obs.)			29.65	753.1	63.9	17.7		SSE	16	7.2			9					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire																0.01	0.3		J. McLandsborough.
Bridgetown, (Barbados)	29.97	761.2	30.00	762.0	80	26.7		NE			1		8					Overcast	Pvt. G. W. Roberts, A. [H.O.
Cambridge, Observatory			29.81	757.2	65.0	18.3		S			1		10					Overcast	H. Todd.
Cardington			29.79	756.7	67.0	19.4		S			1		9					Overcast	John McLaren.
Chatham, School M. E.	29.70	754.4	29.83	757.7	65.7	18.7		S			4		9					D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	28.26	717.8	29.70	754.4	58.0	14.4		SE			4		10					Rain and fog	Alexander Watt.
Donaghadee	29.49	749.0	29.52	749.8	60	15.6		S			5		10					Overcast	J. Mac Gowan.
Dover	29.82	757.4	29.84	757.9	62	16.7		SW			3		5					½ clouded	J. Costello.
Falmouth, Observatory	29.47	748.5	29.69	754.1	61.3	16.3		SSW			4		10					Overcast	The Staff.
Fort Napier, (Natal)	27.32	693.9	29.64	752.8	104.2	40.1		NNW			4		2					D. clouds	Pvt. G. Salmon, A.H. O.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	84	28.9		W			1		4					Raining	
Galway, Queen's College			29.34	745.2	63	17.2		S			5		9					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8				W			2		1					Blue sky	Corpl. Wm. Allen, A.H.O.
Glasgow, Observatory	29.87	758.7	30.08	764.0	61.3	16.3		SSE			5		10					Raining	D. G. Maclean.
Great Yarmouth	29.84	757.9	29.84	757.9	60	15.6		S			4		5					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.64	752.8	29.81	757.2	68.6	20.3		SSW			1		10					Nearly overcast.	The Staff, for G. B. Airy.
Guernsey	29.56	750.8	29.78	756.4	64.5	18.1		SE			2		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.76	755.9	64	17.8		S			3		10k					Showery	M. P. Moyle.
Holyhead	29.56	750.8	29.61	752.1	61	16.1		S			3		10					Drizzling	John Tilston.
Jersey	29.55	750.6	29.84	757.9	62.0	16.7		SSE			3		10			Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	29.77	756.1	29.81	757.2	68.8	20.4		S	13	5.8			10					Threatening	The Staff.
Kingstown	29.52	749.8	29.55	750.6	64	17.8		S			3		9					Overcast	George Mitchell.
Leicester, Museum			29.76	755.9	60.9	16.1		S			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.11	764.8	30.18	766.6	76.4	24.7		N			1		3k					Blue sky	Sergt. Beckett.
Nairn	29.46	748.3	29.55	750.6	64	17.8		Calm			0		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	81.5	27.5		NE			1		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.60	751.8	29.79	756.7	66.4	19.1		S			3		9k;d		S; SSW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.21	741.9	29.72	754.9	64.9	18.3		SSW			5		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.78	756.4	66	18.9		S			3		10					Gloomy	H.E. Bellamy.
Plymouth	29.65	753.1	29.72	754.9	62.2	16.8		S			4		10					Overcast	John Merrifield.
Roche's Point	29.45	748.0	29.50	749.3	61	16.1		S			5		8					Cloudy	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.)			29.54	750.3	57.2	14.0		SSE	31	13.9			5					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.11	764.8	63.8	17.7		N			3		6			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.46	748.3	29.73	755.1	64.1	17.8		SW			2		10			0.07	1.8	Overcast	W. F. Cooper.
Silloth, Rectory	29.59	751.6	29.62	752.3	64.2	17.9	78	E			1		7			0.105	2.67	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.29	744.0	29.70	754.4	62.5	16.9		S			2		7					Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.60	751.8	29.81	757.2	66.3	19.1		S			1		10					Showery	Rev. C. H. Griffith, F.M.S
Thurso	29.48	748.8	29.54	750.3	62	16.7		S			4		6					D. clouds	John Trotter.
Truro, Royal Institution			29.71	754.6	64	17.8		S			6		10					Gloomy	W. Newcombe.
Valencia, Observatory	29.34	745.2	29.36	745.7	60.8	16.0		S	41	18.3			10					Squally	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.44	747.8	59.0	15.0	78	NW			5		7k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.75	755.6	29.94	760.6	75.0	23.9	69	WSW	20.0	8.9		0	0			0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.84	757.9	29.93	760.2	56.0	13.3	79	W	13	5.8			7			0.01	0.3	Squally	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Corrected. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced. Inches.	Barometer. Reduced. Millimeters.	Temp. Fahrenheit.	Temp. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Miles per hour.	Wind. Meters per second.	Wind. Force.	Clouds. Up'er.	Clouds. Low'r.	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
S. S. Algeria																			Capt. W. Watson.
Brig Catherine, N. 38° 35', W. 70° 40'			30.11	764.8	65	18.3		NNE			3		3			5		D. clouds	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 19° 30', W. 56° 50'			30.05	763.3	85	29.4					3		5	NE			Confused.	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller, N. 50° 40', W 11° 20'			29.33	745.0	61	16.1		S			6		6			5	S	Misty	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9, except for Steamship Algeria, (Captain Watson,) which gives estimated height of waves in feet; weather by Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instru-m'tal error and temperature. Inches.	BAROMETER. Corrected for instru-m'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity Miles per hour.	WIND. Velocity Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			
San José	26.22	666.0	29.94	760.5	67.1	19.5	95	SE			1	8c;ck;cs				1.9	48.3		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the uppor and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.09	766.7	30.23	767.9	53.8	12.1	79	SSE			4		8						
Farõe	30.07	763.8	30.09	764.3	59.9	15.5	79	SSE			4		0						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Farõe)	29.38	746.3	29.42	747.2	56.1	13.4	90	SW			4		10						
Vestervig	29.87	758.7	30.04	763.0	56.8	13.8	78	SE			4		6					Rain & fog	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.42	747.3	29.97	761.3	62.6	17	85	SW			1	10		E		0	0	Covered	Collignon, Director.
Amiens, Normal School	29.80	756.8	29.83	757.6	56.1	13.4	78	NE			2	0				0	0	Clear	Bonvallet, Director.
Avignon, Normal School	30.07	763.6	30.14	765.6	73.6	23.1	49	SSE			2	5				0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.48	747.5	29.97	761.3	67.8	19.9	48	S			1	10				0	0	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.67	753.7	29.95	760.7	66.0	18.9	71	SE			1	8		SSW		0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.26	743.0	30.13	765.4	62.6	17	80	S			2	2		W		0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.17	740.8	30.10	764.4	69.8	20.7	51	S			6	2cs		SW		0	0	Slightly cl'dy	M. Marlot, Director.
Bourges, Normal School	29.48	747.5	29.96	761.0	68.4	20.2	77	SE			1	2k		SE		0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.49	749.1	29.73	755.2	64.8	18.2	90	SW			3	10		SW				Raining	The Staff.
Carcassonne, Normal School	29.63	752.5	30.03	762.7	69.8	21	73	E			4	8	E	E		0	0	Very cloudy	Septembre, Director.
Caen	29.79	756.7	29.86	758.5	69.4	20.8	68	SE			1	5		S		0	0	Cloudy	M. Lair, Director.
Chartres, Normal School	29.32	744.7	29.87	758.6	66.6	19.2	84	S			2	10				0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.69	754.2	30.01	762.2	63.5	17.5	86	S			1	5		S		0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.68	728.4	29.98	761.4	73.2	22.9	49	S			1	5		SW		0	0	Cloudy	Alluard, Director.
Commercy, Normal School	29.19	741.4	30.06	763.4	64.0	17.8	74	SE			1	c		SE		0	0		Dr. Coulet, Director.
Commune de Grèasque*	29.08	738.7	30.23	767.7	71.6	22.0	49	SE			2	8	SE	SE		0	0	¾ covered	M. Kina.
Grenoble, Normal School	29.28	743.6	30.03	762.8	61.9	16.6	80	NW			1	2k		W		0	0		M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.60	751.7	29.91	759.7	62.8	17.1	84	SW			1	8		SW		0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.16	740.7	30.05	763.2	70.3	21.3	48	SW			4	0				0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	29.72	754.9	29.82	757.5	67.6	19.8	85	SSE			4			S		0.189	4.8		T. Carré, Director.
Mâcon, Normal School	30.18	766.5	30.21	767.3	60.8	16	80	SW			4	5		SW		0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	29.02	737.2	30.06	763.5	65.5	18.6	67	S			1	5c	S			0	0	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.98	761.5	30.18	766.6	73.4	23	54	S			3		10		S	0	0	Covered	Boyer, Director.
Privas, Normal School	29.10	739.0	30.15	765.8	63.0	17.2	90	S			4		n	N	S	0	0		M. Cantier.
Puy de Dome (Summit)	25.23	640.9			55.6	13.1	60	W			1		10			0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.90	759.5	29.93	760.3	66.2	19.0	96	S			1		10	W	W	1.10	28.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.80	756.8	29.88	759.0	67.6	19.8	64	SE			1		10		S	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)			29.81	757.1	64.6	18.1	87	SSE			2		8		S	0	0	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.78	756.5	29.95	760.7	65.8	18.8	68	S			1-2		10	SSW	SW	0	0	Covered	E. Renou.
Tarbes, Normal School	28.89	733.9	29.95	760.8	64.4	18	80	SW			2		5	SW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.34	745.3	30.03	762.8	72.5	22.5	83	SE			4		2		SE	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.88	759.0	29.91	759.7	82.4	28										1.18	30.		L'Abbé Marchési.
Lyons			29.77	756.2												0	0		L. Jays.
Marseilles, Observatory			30.15	765.9	73.6	23.1	53	SSE			2		5			0	0	Very cloudy	The Staff.
Mont-Louis	25.02	635.6	30.34	770.6	59.7	15.4	24	SSW			7		3		SW	0	0		M. Cave.
Nice			30.23	767.8	69.4	20.8	86	E			2		2			0	0	Clear	Dr. A. Niepce.
Perpignan	29.66	753.3	29.93	760.3	66.7	19.3	68	S			2		10			0	0		Marié Davy, Director
Pic du Midi, (Summit,) H. P			30.02	762.6	74.3	23.5	68	S	13.0	5.83			8		SE	0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P																			M. Baylac.
Toulouse, Observatory	22.63	574.8			50.0	10.0		SW			4-6		10			0	0	Cloudy	Gen'l de Nansouty
Tours	29.30	744.2	30.02	762.6	72.7	22.6	59	SSE			8		9			0.404	10.25		The Staff.
Versailles	29.71	754.7	29.91	759.7	70.9	21.6	59	ESE			1		8		SSW	0	0		C. Marquet.
Zi-Ka-Wei, (near Shanghai)			29.94	760.4	68.0	20.0	64	S			1		9			0	0	Light clouds	Dr. A. Bérigny.
	30.19	766.9	30.22	767.5	64.4	18.0	71	NNE	11.6	5.2		ck	k	W	NE	0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 185 millimeters has been added For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.7	30.08	764.1	63.9	17.7	56	SSE			4		8	S		0	0		Prof. Dr. Hoh.
Berlin	30.05	763.2	30.22	767.6	61.9	16.6	64	S			1		2			0	0		Prof. Arndt.
Breslau	29.76	755.9	30.30	769.5	61.7	16.5	60	SSE			2		1			0	0		Royal University Obs'y
Carlsruhe	29.65	753.1	30.08	764.0	57.9	14.4	79	SW			1		9			0	0		Albert Senz.
Cassel	29.50	749.3	30.11	764.8	66.6	19.2	59	ESE			1		5	SE		0	0		Dr. H. Möhl.
Crefeld	29.82	757.5	29.98	761.3	67.6	19.8	60	SE			4		8			0	0		Director Lose.
Emden	30.01	762.2	30.04	763.1	62.4	16.9	73	SE			3		3			0	0		Prof. Prestel.
Frankfort on the Main	29.73	755.1	30.13	765.2	65.5	18.6		SE			2		2			0	0		Physical Society.
Friedrichshafen	28.69	728.8	30.13	765.4	54.1	12.3	90	SW			1		0			0	0		M. Wilhelm.
Hamburg	30.08	763.9	30.15	765.7	59.9	15.5	74	SE			5		6cs			0	0		Captain F. Hegemann.
Kiel	30.12	765.1	30.14	765.5	59.4	15.2	78	ESE			2		6			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.26	768.6	30.34	770.7	53.6	12.0	62	W			2		4			0.031	0.8		Prof. E Luther.
Köslin			30.28	769.1	56.3	13.5		SE			2		0			0	0		H. Müller.
Leipsic, Observatory	29.76	756.0	30.18	766.6	65.3	18.5	50	FSE			1		3			0	0		Prof. Bruhns.
Memel, Naval School	30.29	769.3	30.34	770.5	53.4	11.9	60	NW			3		1ck						Reinbrecht and Skalweit.
Neufahrwasser	30.26	768.7	30.36	771.1	54.3	12.4	65	NE			2		3	ESE		0	0		A. Lothes.
Posen	30.06	763.4	30.35	770.8	56.8	13.8	58	SSE			5		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.57	751.0	30.12	765.1	54.3	12.4	92	Calm			0		10			0	0		Astronomical Observatory.
Stuttgart	29.13	739.8	30.04	763.0	67.6	19.8	57	S			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.48	748.9	30.01	762.2	62.2	16.8	77	NE			1		10			0.009	0.23	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.63	727.3	30.13	765.4	64.2	17.9	58	SE	2.7	1.2			2c			0	0		Dr. Von Bebber.
Wustrow, Naval School	30.19	766.7	30.21	767.3	50.6	15.3	71	SE			2		4s			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.76	756.0	30.15	765.7	75.6	24.2		NE			1.5		k					Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES.

Furnished by the cooperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.32	744.7	29.78	756.5	91.6	33.1	45	WNW					0			0	0	Blue sky	
Bombay	29.78	756.3	29.81	757.3	84.2	29.0	82	SW	9	4.0			10	SW	SSW	0	0	Overcast	
Poona	27.84	707.1	29.84	758.0	77.8	25.4	68	WNW					10		WNW	0	0	Overcast	
Lahore	28.90	734.0	29.63	752.6	86.0	30.0	55	Calm	2.7	1.2			2			0	0	Blue sky	
Belgaum	27.82	694.0	29.88	758.9	73.0	22.8	90	WSW	4	1.8			9	E	W	0.06	1.5	D. clouds	
Roorkee	28.75	730.3	29.64	752.8	84.8	29.4	59	Calm	3	1.3						0	0		
Agra	29.09	738.8	29.64	752.7	92.6	33.7	35	N								0	0		
Nagpur	28.67	728.2	29.70	754.4	85.4	29.7	62	Calm	1.8	0.8			4			0	0	D. clouds	
Lucknow	29.27	743.5	29.63	752.7	89.7	32.1	53	Calm	0.1	0.04						0	0	Blue sky	
Allahabad	29.33	745.1	29.64	752.8	84.9	29.4	66	Calm	1.0	0.4			0			0	0	Blue sky	
Patna	29.47	748.4	29.64	752.9	86.4	30.2	72	SW	0.2	0.1			0			0	0.	Blue sky	
Hazaribagh	27.68	677.8	29.68	753.8	81.0	27.2	67	NW	3.8	1.7			3			0	0		
Cuttack	29.03	752.6	29.71	754.7	80.6	27.0	73	SSW	1.6	0.7			1			3.00	76.2	Thunder	
Calcutta (Alipore)	29.64	762.9	29.66	753.5	78.9	26.1	91	WNW	2.0	0.9			10			0	0	Thunder	
Goalpara	29.28	743.6	29.66	753.4	81.1	27.3	86	S	2.4	1.1			7					D. clouds	
Chittagong	29.56	760.9	29.66	753.2	77.9	25.5	95	SE	2.6	1.2			10			0.40	10.2	Raining	
Sibsagar	29.38	746.2	29.72	754.8	73.3	24.6	90	ENE	1.8	0.6			10	W	W	0.48	12.2	Gloomy	
Jubbulpore	28.36	720.3	29.70	754.5	84.8	29.3	53	E	2.0	0.9			4			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.5 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.82	757.5	30.23	767.8	66.4	19.1	49	SW	0.7	0.3	.....	.....	0	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.11	764.9	30.23	767.7	66.4	19.1	63	WNW	0.7	0.3	.....	.....	1	N	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	30.03	762.8	30.22	767.6	68.0	20.0	56	W	0.7	0.3	.....	.....	1	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.89	733.8	30.20	767.0	67.3	19.6	73	S	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.69	754.0	30.20	767.0	68.9	20.5	60	SE	.....	.....	2	.....	6	.....	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.32	744.6	30.21	767.4	66.0	18.9	56	NNW	3.1	1.4	.....	.....	9	SE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.90	718.7	30.19	766.8	63.7	17.6	60	N	.....	.....	2	.....	5	SE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	30.00	761.9	30.22	767.5	68.2	20.1	67	E	.....	.....	4	.....	7	NW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	30.05	763.2	30.22	767.5	70.0	21.1	59	W	1.8	0.8	.....	.....	10	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.91	759.8	30.23	767.8	70.7	21.5	47	ENE	.....	.....	2	.....	1	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.97	761.2	30.22	767.6	69.8	21.0	48	N	.....	.....	2	.....	0	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	30.07	763.8	30.15	765.9	70.0	21.1	67	W	4.9	2.2	.....	.....	1	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.71	729.1	30.25	768.3	62.8	17.1	61	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	30.04	763.0	30.21	767.4	73.2	22.9	40	W	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	30.04	763.0	30.24	768.0	73.9	23.3	54	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.93	760.1	30.18	766.5	68.2	20.1	67	N	10.5	4.7	.....	.....	4	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.93	760.3	30.12	765.1	75.2	24.0	68	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.33	744.9	30.20	767.1	73.4	23.0	71	SE	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.07	761.1	30.22	767.5	72.0	22.2	57	ENE	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.12	765.1	30.23	767.7	72.5	22.5	66	ENE	6.3	2.8	.....	.....	4	WNW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.0 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.86	758.4	30.06	763.5	69.5	20.8	57	NE	11.7	5.2	.....	.....	10n;s	.....	.....	.....	.....	Light rain...	
Tokei (Yeddo) Observatory	30.08	764.0	30.15	765.8	57.1	13.9	82	ENE	7.3	3.3	.....	.....	10s	.....	.....	0.115	2.92	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	62.4	16.9	56	NW	.....	.....	2	7c	3s	.....	.....	0.898	22.8	Very cloudy	P. Ceballos.
Guadalajara	25.07	636.8	30.05	763.3	55.4	13.0	65	SE	.....	.....	2	.....	9	.....	.....	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.43	620.7	30.00	762.2	58.3	14.6	83	W	.....	.....	1	1c	1s	SW	Calm	0	0	Clear.	Prof. M. Leal.
Mexico	23.13	587.6	30.14	765.5	54.7	12.6	92	Calm	0	0	.....	0	10k	.....	NE	0	0	Covered...	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	57.2	14.0	79	Calm	.....	.....	0	0	1s	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.05	760.7	29.96	761.0	74.1	23.4	97	NNW	.....	.....	6	0	10	.....	N	1.489	37.8	Rainy.....	M. M. Cházaro.
San Luis Potosi	24.24	615.1	30.19	766.7	54.0	12.2	48	E	.....	.....	6	1	10sk	W	E	0	0	Misty.....	G. Barroeta, M. D.
Vera-Cruz	29.99	761.7	30.02	762.4	80.6	27.0	72	NNW	16.3	7.3	.....	.....	10sk	.....	.....	0.630	16.0	Dark.....	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.5	30.05	763.3	49.1	9.5	86	NNE	0.4	0.2	.....	1	2	Calm	Calm	0.002	0.04	.....	Prof. P. Spina.
Durango	24.23	615.5	30.06	763.4	64.0	17.8	79	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, C. E.
Colima	28.34	719.8	29.96	761.0	78.1	25.6	84	Calm	0	0	.....	.....	10	.....	NE	0.394	10.0	Covered	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,165 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Groningen	29.93	760.3	29.93	760.3	65.8	18.8	.....	SE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Helder	29.94	760.4	29.99	761.8	60.1	15.6	.....	S	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.92	760.0	29.92	760.0	59.5	15.3	.....	ESE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Utrecht	29.92	760.0	29.92	760.0	63.7	17.6	84	ESE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
.....	29.92	759.9	29.97	761.1	63.9	17.7	71	SSE	.....	.....	3	.....	8	.....	.....	.....	.....	Very cloudy	H. v d Brink.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.90	759.5	29.96	760.9	54.0	12.2	87	S	31.3	14.0	.....	.....	10	.....	.....	0.118	3.0	Light rain...	
Brönö	29.88	758.9	29.92	759.9	41.4	5.2	69	SSE	18	8	.....	.....	10	.....	.....	0.370	9.4	.....	
Christiania	29.97	761.2	30.11	764.9	42.8	6.0	96	Calm	0	0	.....	.....	10	.....	.....	0.067	1.7	.....	
Tromsö	29.99	761.8	30.04	762.9	31.3	— 0.4	89	SSW	9	4	.....	.....	0	.....	.....	0	0	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.91	759.7	30.10	764.5	67.3	19.6	83	W	7.4	3.3	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.06	738.0	30.07	763.8	66.2	19.0	87	SW	8.7	3.9	.....	.....	10	SW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.14	765.6	30.23	767.8	74.5	23.6	72	SE	13.0	5.8	.....	.....	2	.....	.....	0.067	1.7	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.5	30.06	763.4	69.6	20.9	81	SW	18.6	8.3	.....	.....	5	.....	.....	0.051	1.3	.....	The Staff.
Ponta Delgada, (Azores)	30.08	763.9	30.15	765.7	74.8	23.8	61	WNW	12.5	5.6	.....	.....	4	.....	.....	0.020	0.5	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	30.00	762.0	79.7	26.5	.....	WSW	.....	.....	3	.....	10	.....	WSW	1	.....	Blue sky.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	.....	.....	29.97	761.3	78.8	26.0	.....	ENE	.....	.....	2	.....	10	.....	ENE	1	ENE	Showery.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.97	761.2	30.07	.8	74.8	23.8	65	SE	0.9	0.42	.....	6	1	.....	.....	0	0	Solar halo...	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.82	757.5	29.88	758.9	81.7	27.6	50	S	4.5	2.03	.....	4	5	SW	.....	0	0	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.06	687.4	.....	.....	67.3	19.6	71	S	8.8	3.94	.....	.....	9	.....	.....	0.315	8.0	Misty.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.84	707.1	29.99	761.8	73.8	23.2	52	SW	38.6	15.00	.....	0	10	.....	.....	0	0	Covered.....	The Staff.
Murcia, Met. Obs'y	29.89	759.2	30.04	762.9	82.4	28.0	59	ESE	1.7	0.78	.....	3	6	W	.....	0	0	Cloudy.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.96	735.6	29.84	757.8	65.7	18.7	80	SW	17.4	7.78	.....	.....	7	.....	.....	1.484	37.7	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.92	760.1	29.99	761 7	76.1	24.5	89	ENE	4.7	2.1	.....	0	1ks	.....	.....	2.065	53.2	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.05	763.2	30.15	765.7	73.0	22.8	73	SSW	14.0	6.3	.....	4	5	S	S	0	0	.....	Capt. C. Fujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.93	760.2	30.02	762.5	79.9	26.6	86	SW	0	0	.....	6km	3kn	SE	SE	0.069	1.75	Cloudy.....	Leonardo de Tejeda, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 866 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,159.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.09	764.2	30.13	765.2	37.0	2.8	.....	NW	.....	.....	2	.....	4	.....	.....	0	0	.....	
Umea	30.09	764.3	30.14	765.6	42.4	5.8	58	SW	.....	.....	2	.....	7	.....	.....	0.157	4.0	.....	
Hernosand	30.07	763.8	30.12	765.1	44.2	6.8	74	S	.....	.....	4	.....	8	.....	.....	0	0	.....	
Stockholm	30.08	764.1	30.26	768.6	47.3	8.5	49	WSW	.....	.....	2	.....	3	.....	.....	Inap.	Inap.	.....	
Wisby	30.17	766.4	30.23	767.9	48.6	9.2	56	NW	.....	.....	4	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.15	765.9	30.23	767.8	48.0	8.9	55	SSW	.....	.....	.....	.....	9	WNW	.....	0.009	0.24	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.69	728.7	30.09	764.3	62.1	16.7	68	N	.....	.....	2	.....	2	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.50	724.0	30.13	765.3	57.9	14.4	83	NW	.....	.....	2	.....	4	.....	.....	0	0	Bright	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.3 mm.; Thermometer, +2.0 cent.; Relative Humidity, —1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.17	766.2	63.5	17.5	63	NW	15	6.5	.....	.....	7	.....	NW	0	0	.....	The Observatory.
Valona	.....	.....	30.24	768.1	69.1	20.6	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.80	756.9	29.91	759.7	82.0	27.8	54	W	.....	.....	2	.....	3ks	.....	E; W	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.71	754.6	30.02	762.5	47	8.3	.....	Calm	0	0	.....	.....	10n	.....	SW	0.10	2.5	Light rain	W. R. Bigg.
*Chatham, N. B	30.00	762.0	30.06	763.5	46	7.8	96	NE	1	0.4	.....	2k	2ks	Calm	Calm	Inap.	Inap.	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.97	761.2	30.01	762.2	53	11.7	76	NE	8	3.6	.....	.....	8ks	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.02	762.5	47.7	8.7	92	W	.....	.....	1	.....	10n	.....	.....	.....	.....	Light rain	James Smith, M. A.
Dalhousie, N. B	29.92	760.0	30.08	764.0	39.7	4.3	93	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.12	765.0	30.17	766.3	49.3	9.6	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.02	0.5	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.04	763.0	30.06	763.5	41	5.0	91	S	4	1.8	.....	2c	8s	Calm	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	29.99	761.7	30.06	763 5	44.1	6.7	76	NW	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	28.98	736.1	29.82	757.4	38	3.3	81	E	4	1.8	.....	.....	10n	.....	.....	0.040	1.02	Cloudy	James Stewart.
Granton, Ontario	29.04	737.6	30.17	766.3	41	5.0	91	NW	.....	.....	1	1cs	0	NW	.....	0.07	1.8	Clear	James Grant.
*Halifax, N. S	29.78	756.4	29.91	759.4	49	9.4	94	NE	9	4.0	.....	.....	8ks	.....	NE	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.18	766.6	43.5	7.4	77	SW	.....	.....	3	6	0	.....	.....	0.09	2.3	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	30.00	762.0	30.03	762.7	47	8.3	85	NW	.....	.....	1	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.04	763.0	48	8.9	83	SE	3	1.3	.....	.....	10ks	.....	Calm	0.26	6.6	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.96	761.0	30.00	762.0	55.0	12.8	72	NE	12	5.4	.....	8ks	0	N	.....	0	0	Thunder	C. H. Rigby.
*Montreal, Quebec	29.84	757.9	30.04	763.0	48	8.9	92	SE	6	2.7	.....	.....	10n	.....	Calm	0.17	4.3	Light rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.41	747.0	30.11	764.8	42	5.6	89	W	7	3.1	.....	2ck	0	W	.....	0.54	13.7	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.32	744 7	30.08	764.0	45.7	7.6	92	Calm	.....	.....	0	8k	0	.....	.....	0.34	8.6	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.17	766.3	41	5.0	93	W	7	3.1	.....	0	0	.....	.....	0.11	2.8	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.53	750.0	30.20	767.1	40	4.4	85	W	6	2.7	.....	0	0	.....	.....	0.08	2.0	Clear	M. Payne.
*Quebec, Quebec	29.69	754.1	30.02	762.5	44	6.7	84	Calm	.....	.....	0	Haze	Fog	.....	.....	0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.58	751.3	30.05	763.3	42	5.6	100	NW	3	1.3	.....	.....	Fog	.....	NW	0.34	8.6	Foggy	W. H. McIntyre.
St. Andrews, N. B	29.96	761.0	30.01	762.2	47	8.3	84	NE	2	0.9	.....	5k	5ks	SE	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	29.83	757.7	30.00	762.0	47	8.3	77	N	8	3.6	.....	.....	10ks	.....	.....	0.03	0.8	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.42	747.3	30.14	765.5	47	8.3	68	NW	37	16.5	.....	2k	5ks	.....	W	0.21	5.3	Fair	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.87	733.3	30.18	766.6	40.3	4.6	86	NW	7.5	3.4	.....	1c	3s	NW	.....	0.064	1.63	Fair	C. J. MacGregor, M. A
*Sydney, C. B	29.99	761.7	30.02	762.5	51	10.6	92	SW	1	0.4	.....	.....	10s	.....	.....	0.01	0.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.73	755 1	30.12	765.0	43	6.1	83	NW	10	4.5	.....	2k	0	NW	.....	0.15	3.8	Fair	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	50	10.0	79	S	.....	.....	.....	1ck	2s	.....	.....	0.02	0.5	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,122 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	30.03	762.7	50	10.0	79	N	1	0.4	.....	2c	5s	W	W	Inap.	Inap.	Fair	
Alpena, Michigan	29.51	749.5	30.18	766.6	38	3.3	81	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Atlanta, Georgia	28.96	735.6	30.08	764.0	63	17.2	83	NW	4	1.8	.....	8ck	0	Calm	.....	0	0	Fair	
Atlantic City, New Jersey	30.00	762.0	30.01	762.2	58	14.4	81	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Augusta, Georgia	29.95	760.7	30.14	765.5	61	16.1	82	Calm	0	0	.....	5ck;cs	8mk;fg	SW	.....	0	0	Fair	
Baltimore, Maryland	30.06	763.5	30.11	764.8	55	12.8	68	NW	7	3.1	.....	2c	2s	NW	NW	0	0	Fair	
Barnegat, New Jersey	30.02	762.5	30.04	763.0	59	15.0	70	NW	5	2.2	.....	.....	10s	.....	NW	0	0	Cloudy	
Bismarck, Dakota	27.96	710.2	29.82	757 4	47	8.3	41	W	18	8.0	.....	10cs	Sm'e	NW	.....	0	0	Cloudy	
Boerne, Texas	28.62	726.9	.....	.....	70	21.1	57	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.31	693.7	30.27	768.8	42	5.6	54	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.88	758.9	30.04	763.0	49.5	9.7	75	NW	7	3.1	.....	.....	10n;hz	.....	NW;Calm	Inap.	Inap.	Light rain	
Brackettville, Texas	28.94	735.1	29.95	760.7	68	20.0	74	Calm	0	0	.....	Haze	0	.....	.....	0	0	Hazy	
Breckenridge, Minnesota	28.68	728.5	29.66	753.4	48	8.9	78	SE	11	4.9	.....	8k	0	SW	.....	0	0	Cloudy	
Brownsville, Texas	29.97	761.2	30.03	762.7	74	23.3	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.40	746.7	30.11	764.8	47	8.3	85	W	13	5.8	.....	1k	0	W	.....	0.18	4.6	Clear	
Burkes, Arizona	.....	.....	.....	.....	56	13.3	46	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.81	757.2	30.07	763.8	48	8.9	70	S	2	0.9	.....	5cs	Haze	Calm	Calm	0	0	Fair	
Cairo, Illinois	29.76	755.9	30.16	766.1	49	9.4	85	NE	8	3.6	.....	0	0	.....	.....	0.04	1.0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	54	12.2	55	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	61	16.1	50	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.85	682.0	30.34	770.6	48	8.9	29	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.49	698.2	29.98	761.5	37	2.8	63	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.05	763.3	30.06	763.5	70	21.1	85	SW	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.01	762.2	30.03	762.7	62	16.7	88	SW	10	4.5	.....	.....	10s	.....	S	0	0	Cloudy	
Cape Lookout, N. Carolina	30.06	763.5	30.07	763.8	71	21.7	85	W	16	7.2	.....	0	Haze	.....	W	0	0	Hazy	
Cape May, New Jersey	30.04	763.0	30.07	763.8	60	15.6	66	NW	28	12.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Castroville, Texas	29.28	743.7	29.96	761.0	71	21.7	62	NE	4	1.8	.....	5ck	0	W	.....	0	0	Fair	
Charleston, South Carolina	30.09	764.3	30.16	766.1	69	20.6	90	W	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	38	3.3	31	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.48	748.8	30.19	766.8	46	7.8	77	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.64	752.8	30.30	769 6	47	8 3	92	N	1	0.4	.....	.....	Fog	.....	Calm	0.05	1.3	Dense fog	
Cleveland, Ohio	29.49	749.0	30.22	767.6	52	11.1	41	N	12	5.4	.....	0	0	.....	.....	0.80	7.6	Clear	
Coleman City, Texas	28.31	719.1	29.98	761.5	55	12.8	93	N	4	1.8	.....	2c	0	Calm	.....	0.84	21.3	Fair	
Columbus, Ohio	29.41	747.0	30.28	769.1	38	3.3	91	Calm	0	0	.....	.....	Fog	.....	Calm	0.05	1.3	Foggy	
Concho, Texas	28.19	716.0	29.86	758.4	55	12.8	86	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.61	752.1	30.07	763.8	63	17.2	100	N	4	1.8	.....	.....	10s	.....	Calm	0.35	8.9	Cloudy	
Davenport, Iowa	29.54	750.3	30.19	766.8	47	8.3	77	SW	6	2.7	.....	1c	0	SW	.....	0.01	0.3	Clear	
Decatur, Texas	28.93	734.8	30.10	764.5	56	13.3	94	Calm	0	0	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Denison, Texas	29.29	744.0	30.09	764.3	59	15.0	94	NE	2	0.9	.....	.....	10s	.....	Calm	0.09	2.3	Cloudy	
Denver, Colorado	24.80	629.9	30.02	762.5	58	14.4	7	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.05	763.3	47	8.3	85	SW	8	3.6	.....	5c	Haze	NW	Calm	0	0	Fair	
Detroit, Michigan	29.54	750.3	30.23	767.8	40	4.4	73	W	3	1.3	.....	0	0	.....	.....	0.02	0.5	Clear	
Dodge City, Kansas	27.36	694.9	29.64	752.8	48	8.9	93	S	20	8.9	.....	0	2s	.....	S	0.01	0.3	Fair	
Dubuque, Iowa	29.42	747.3	30.13	765.3	48	8.9	70	SW	6	2.7	.....	5c	0	W	.....	0	0	Fair	
Duluth, Minnesota	29.19	741.4	29.87	758.7	47	8.3	70	NW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eagle Pass, Texas	29.33	745.0	30 06	763.5	69	20.6	76	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	29.93	760.2	30.00	762.0	50	10.0	79	N	9	4.0	.....	5k	5s	SW	NE	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	69	20.6	95	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	64	17.8	67	Calm	0	0	.....	0	5s	.....	Calm	0.99	25.1	Fair	
Erie, Pennsylvania	29.45	748.0	30.16	766.1	51	10.6	59	NW	18	8.0	.....	10k	0	NW	.....	1.45	36.8	Cloudy	
Escanaba, Michigan	29.44	747.8	30.11	764.8	39	3.9	73	NW	2	0.9	.....	5k	0	NW	.....	0	0	Fair	
Florence, Arizona	28.40	721.3	30.00	762.0	72	22.2	71	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.61	650.5	29.68	753.9	50	10.0	78	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.29	642.4	30.25	768.3	56	13.3	81	W	1	0.4	.....	2k	0	SW	.....	0.04	1.0	Fair	
Fort Gibson, Indian Ter	29.57	751.1	30.11	764.8	57	13.9	87	SE	7	3.1	.....	.....	10s	.....	S	0.13	3.3	Cloudy	
Fort Griffin, Texas	28.83	732.3	30.11	764.8	52	11.1	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.87	707.9	29.75	755.6	65	18.3	68	S	2	0.9	.....	0	Haze	.....	.....	0	0	Hazy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.89	733.8	30.09	762 0	56	13.3	87	E	8	3.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fredericksburg, Texas	28.33	719.6	29.86	758.4	69	20.6	65	Calm	0	0	.....	5c	0	Calm	.....	0	0	Fair	
Galveston, Texas	30.00	762.0	30.04	763.0	77	25.0	77	NW	5	2.2	.....	0	5ks	.....	NW	0	0	Fair	
Graham, Texas	29.01	736.8	30.06	763.5	55	12.8	81	Calm	0	0	.....	.....	Fog	.....	.....	0.36	9.1	Foggy	
Grand Haven, Michigan	29.52	749.8	30.19	766.8	41	5.0	82	S	2	0.9	.....	2k	2s	N	Calm	0	0	Fair	
Indianapolis, Indiana	29.45	748.0	30.26	768.6	40	4.4	91	Calm	0	0	.....	.....	Fog	.....	Calm	0.08	2.0	Foggy	
Indianola, Texas	30.03	762.7	30.06	763.5	73	22.8	85	NE	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.93	734.8	29.87	758.7	51	10.6	93	W	2	0.9	.....	0	0	.....	.....	0	0	Foggy	
Jacksonville, Florida	30.09	764.3	30.11	764.8	68	20.0	90	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.51	749.5	30.14	765.5	45	7.2	92	S	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Key West, Florida	29.98	761.5	30.01	762.2	79	26.1	82	NE	14	6.3	.....	2cs	2ks	E	E	0	0	Fair	
Kittyhawk, North Carolina	30.01	762.2	30.03	762.7	65	18.3	89	SW	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Knoxville, Tennessee	29.18	741.2	30.18	766.6	56	13.3	75	NE	4	1.8	.....	10cs	0	Calm	.....	0.09	2.3	Cloudy	
La Crosse, Wisconsin	29.30	744.2	30.03	762.7	52	11.1	72	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.17	664.7	30.32	770.1	50	10.0	87	Calm	0	0	.....	0	0	.....	.....	0.09	2.3	Clear	
Laredo, Texas	29.59	751.6	29.92	760.0	74	23.3	81	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.82	630.4	30.09	764.3	43	6.1	43	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Leavenworth, Kansas	29.23	742.4	30.08	764.0	47	8.3	85	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.58	751.3	29.92	760.0	53	11.7	89	Calm	0	0	.....	0	Fog	.....	Calm	0.01	0.3	Clear	
Louisville, Kentucky	29.71	754.6	30.29	769.4	47	8.3	77	N	3	1.3	.....	.....	Fog	.....	Calm	Inap.	Inap.	Dense fog	
Lynchburg, Virginia	29.46	748.3	30.13	765.3	63	17.2	47	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	29.14	740.1	30.14	765 5	48	8.9	71	SW	12	5.4	.....	5ck	0	NW	.....	0	0	Fair	
Marquette, Michigan	29.34	745.2	30.01	763.0	45	7.2	61	S	5	2.2	.....	5k	0	SE	.....	0	0	Fair	
Mason, Texas	28.43	722.1	30.15	765.8	66	18.9	78	Calm	0	0	.....	0	8ks	.....	W	0	0	Fair	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.41	747.0	30.15	765.8	48	8.9	63	SW	12	5.4	.....	1ck	0	Calm	.....	0	0	Clear	
Mobile, Alabama	30.04	763.0	30.09	764.3	71	21.7	87	S	3	1.3	.....	0	1s	.....	Calm	0	0	Clear	
Montgomery, Alabama	29.87	758.7	30.10	764.5	66	18.9	73	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.11	764.8	50	10.0	79	SW	2	0.9	.....	5k	0	SW	.....	0.16	4.1	Fair	
Mt. Washington, N. H.	23.77	603.8	30.13	765.3	30	—1.1	89	NW	1	0.4	.....	10ks	Fog	Calm	NW	0	0	Cloudy	
Nashville, Tennessee	29.66	753.4	30.21	767.3	50	10.0	93	NE	4	1.8	.....	8cs	0	E	.....	0.3	8.	Fair	
New Haven, Connecticut	29.93	760.2	30.04	763.0	53	11.7	73	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
New London, Connecticut	29.99	761.7	30.04	763.0	53	11.7	80	N	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
New Orleans, Louisiana	30.00	762.0	30.05	763.3	75	23.9	77	Calm	0	0	.....	5k	0	SE	.....	0.06	1.5	Fair	
Newport, Rhode Island	29.98	761.5	30.03	762.7	57	13.9	69	N	4	1.8	.....	.....	10ks	.....	W	0	0	Cloudy	
New York, New York	29.89	759.2	30.06	763.5	56	13.3	68	NW	11	4.9	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Norfolk, Virginia	30.09	762.0	30.05	763.3	62	16.7	83	N	6	2.7	.....	10ck	0	NW	.....	0	0	Cloudy	
North Platte, Nebraska	27.00	685.8	29.57	751.1	43	6.1	92	SW	5	2.2	.....	10cs	0	SW	.....	0	0	Cloudy	
Olympia, Washington Ter.	30.17	766.3	30.21	767.3	53	11.7	86	N	4	1.8	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Omaha, Nebraska	28.86	733.0	29.93	760.2	50	10.0	79	S	13	5.8	.....	10c	0	NW	.....	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte. for instru-m'tal error and temperature. Inches.	Barometer. Correcte. for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.72	754.9	30.04	763.0	53	11.7	80	SW	7	3.1	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
Pembina, Dakota	28.88	733.5	29.70	754.4	42	5.6	66	E	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.04	763.0	30.09	764.3	56	13.3	63	N	14	6.3	.....	.....	10s;hz	.....	SW; Calm	0	0	Cloudy	
Phœnix, Arizona	28.77	730.7	.....	.....	61	16.1	45	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.85	452.2	30.06	763.5	21	— 6.1	43	W	44	19.7	.....	2cs	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.17	613.9	29.94	760.5	53	11.7	19	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.38	746.2	30.20	767.1	47	8.3	85	NW	8	3.6	.. ....	0	0	.....	.....	0.16	4.1	Clear	
Port Huron, Michigan	29.62	749.8	30.20	767.1	48	6.1	75	W	6	2.7	.....	0	0	.....	.....	0.08	2.0	Clear	
Portland, Maine	29.99	761.7	30.04	763.0	51	10.6	72	N	4	1.8	.....	8k	0	W	.....	0	0	Cloudy	
Portland, Oregon	30.14	765.5	30.25	768.3	53	11.7	93	NW	4	1.8	.....	0	8ks	.....	Calm	Inap.	Inap.	Cloudy	
Prescott, Arizona	24.86	631.4	30.22	767.6	44	6.7	52	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.20	741.7	30.01	762.2	64	17.8	83	SE	2	0.9	.....	5k	0	S	.... .	0.01	0.3	Cloudy	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	74	23.3	76	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.59	751.6	29.94	760.5	60	15.6	60	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.85	758.2	30.05	763.3	74	23.3	51	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.45	748.0	30.07	763.8	48	8.9	85	W	12	5.4	.....	1k	0	Calm	.....	0.06	1.5	Clear	
Roseburg, Oregon	29.63	752.6	30.21	767.3	44.5	6.9	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.85	758.2	29.93	760.2	58	14.4	76	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.24	768.1	47	8.3	85	Calm	0	0	.....	.....	Fog	.....	.....	0.11	2.8	Foggy	
St. Marks, Florida	30.09	764.3	30.10	764.5	64	17.8	94	NE	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
St. Paul, Minnesota	29.02	737.1	29.84	757.9	52	11.1	66	SW	14	6.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Salt Lake City, Utah	25.75	654.0	30.08	764.0	43.0	6.1	59	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.38	746.2	29.96	761.0	67	19.4	79	N	4	1.8	.....	2c	0	Calm	.....	0	0	Fair	
San Diego, California	29.87	758.7	29.95	760.7	58	14.4	100	N	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.57	751.1	30.20	767.0	43	6.1	92	SW	6	2.7	.....	0	0	.....	.....	0.15	3.8	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.05	763.3	58	14.4	76	W	16	7.2	.....	.....	10s	.....	NW	0	0	Cloudy	
San Francisco, California	29.88	758.9	29.94	760.5	58	14.4	88	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	41	5.0	57	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.04	763.0	30.13	765.3	70	21.1	90	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.86	758.4	30.07	763.8	63	17.2	94	NE	8	3.6	.....	.....	10s	.....	NE	0.12	3.0	Cloudy	
Silver City, New Mexico	24.39	619.5	.....	.....	48	8.9	70	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.10	764.5	30.14	765.5	68	20.0	84	W	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Springfield, Massachusetts	29.92	760.0	30.05	763.3	52	11.1	73	N	1	0.4	.....	.. ....	10s	.....	N	0	0	Cloudy	
Stockton, Texas	27.07	687.6	30.07	763.8	57	13.9	63	SW	4	1.8	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass.	29.97	761.2	30.02	762.5	57	13.9	81	N	7	3.1	.....	.....	10s	.....	NW	0	0	Cloudy	
Toledo, Ohio	29.53	750.0	30.22	767.6	45	7.2	84	SW	3	1.3	.....	0	Fog	.....	Calm	0.07	1.8	Clear	
Tucson, Arizona	.....	.....	.....	.....	71	21.7	63	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.11	764.8	30.14	765.5	73	22.8	85	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.78	756.4	.....	.....	47	8.3	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	40	4.4	100	SE	.....	.....	2	.....	10s	.....	S	0.02	0.5	Cloudy	
Uvalde, Texas	29.17	740.9	29.98	761.5	68	20.0	79	NE	5	2.2	.....	5ck	0	W	.....	0	0	Fair	
Vicksburg, Mississippi	29.86	758.4	30.12	765.0	65	18.3	78	NE	4	1.8	.....	5k	6s	Calm	Calm	0	0	Cloudy	
Virginia City, Montana	24.37	619.0	29.85	758.2	39	3.9	73	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Visalia, California	29.62	752.3	29.98	761.5	58	14.4	64	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.02	762.5	30.13	765.3	54	12.2	80	NW	12	5.4	.....	0	2ks	.....	W	Inap.	Inap.	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	53	11.7	61	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.03	762.7	30.11	764.8	66	18.9	78	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	38	3.3	54	NE	8	3.6	.....	0	0	.....	.....	0	0	Cloudy	
Wood's Holl, Mass.	29.99	761.0	30.01	762.2	58	14.4	81	N	3	1.3	.....	.....	10s	.....	NW	0	0	Cloudy	
Yankton, Dakota	28.55	725.2	29.81	757.2	54	12.2	67	S	16	7.2	.....	8cs	2s	W	W	0	0	Clear	
Yuma, Arizona	29.73	755.1	29.89	759.2	69	20.6	35	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Fair	J. Fortescue, W. Wood.
York Factory, B. A.	29.92	760.0	29.97	761.2	25.5	— 3.6	94	N	16	7.2	.....	2c	0	N	.....	0	0	Clear	Chas. Hasselbrink.
Havana, Cuba, W. I.	29.86	761.0	29.98	761.5	79	26.1	86	SE	2.4	1.1	.....	0	0	.....	.....	1.89	48.0	.....	Robert Mason.
Santiago de Cuba, W. I.	29.95	760.7	29.98	761.5	80	26.7	86	Calm	0	0	.....	9cs	0	NE	.....	.....	.....	.....	G. O. Gellich.
St. Thomas, W. I.	.....	.....	.....	.....	87	30.6	83	E	8	1.3	.....	2c	4ks	SE	.....	0.58	14 7	Clear	James Gall.
Kingston, Jamaica, W. I.	30.11	764.8	30.12	765.0	80	26.7	87	Calm	0	0	.....	5c	2s	Calm	.....	0	0	.....	Partly cl'dy
Navassa, W. I.	29.89	759.2	29.97	761.2	83	28.3	.....	NE	8.3	3.7	.....	.....	.....	.....	.....	0.45	11.4	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	84	28.9	83	E	.....	.....	1	5k?	8ks	E	.....	0	0	⅛ cloudy	C. J. Hering
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	67.5	19.7	78	SW	1	0.4	.....	7cs	2ks	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.77	756.1	30.08	764.0	76	24.4	81	S	.....	.....	4	c	.....	.....	.....	.....	.....	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,860 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.30	769.6	73.5	23.1	73.5	23.1	65	N	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N. H	29.93‡?	760.2‡?	.....	.....	50	10.0	93	WNW	1	0.4	.....	.....	10	.....	.....	0.1	0.3	.....	.....	Overcast.....	
Naval Hospital, Yokohama, Japan	30.05*	763.3*	65	18.3	59.5	15.3	89	E	.....	.....	5	.....	10n;ks	.....	E	0.30	7.6	.....	.....	Light rain...	
Adams. S. 42° 45′, W. 93° 15′	29.80	756.9	63	17.2	48	8.9	85	SSW	.....	.....	4	.....	5	.....	SSW	.....	.....	Long	SSW	Cloudy	
Alaska, Valparaiso, Chili	30.11	764.8	63	17.2	55	12.8	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance, Volo, Turkey	30.16‡	766.1‡	.....	.....	72	22.2	53	S	.....	.....	1–2	.....	2	.....	S	.....	.....	.....	.....	Hazy.....	
Ashuelot. Kobe, Japan	30.16	766.1	67	19.4	65	18.3	58	NNE	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La	30.06	763.5	54	12.2	71	21.7	??	SE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Fair	
Colorado, New York, N. Y.	30.06‡	763.5‡	.....	.....	58	14.4	70	NNW	6	2.7	.....	.....	8	.....	SW	0	0	.....	.....	Foggy	
Constitution, Havre, France	.....	.....	.....	.....	65	18.3	100	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Despatch, Volo, Turkey	30.19‡	766.8‡	.....	.....	73	22.8	63	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, S. 35° 47′, W. 24° 57′	29.84	757.9	67	19.4	58	14.4	94	W	.....	.....	4	.....	5	.....	W	.....	.....	Rough	W	Fair	
Franklin, Norfolk, Va	30.12	765.0	65	18.3	62	16.7	100	NNW	16.8	7.5	.....	.....	10	W	NNW	0	0	.....	.....	Cloudy.....	
Gettysburg Valetta, Malta	30.13‡	765.3‡	.....	.....	77	25.0	100	E	.....	.....	1	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Guard, S. 15° 57′, W. 35° 45′	30.08	764.0	76	24.4	74	23.3	95	SSE	.....	.....	5	.....	10	.....	SSE	.....	.....	Long	S	Rainy	
Hartford, Rio de Janeiro, Brazil	30.10	764.5	.....	.....	73	22.8	76	NNE	1.8	0.8	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Marion, N. 43° 40′, E. 14° 00′	30.24	768.1	70	21.1	70	21.1	61	NNW	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Michigan, Erie, Pa	30.04†	763.0†	.....	.....	52	11.1	86	W	.....	.....	6	.....	8	.....	NNW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan	30.12‡	765.0‡	.....	.....	61	16.1	71	ENE	.....	.....	3–5	.....	10	.....	ENE	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C	30.30	769.6	75	23.9	73	22.8	85	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru	30.08†	764.0†	.....	.....	63	17.2	78	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.42	772.7	57	13.9	48	8.9	85	NNW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C	.....	.....	.....	.....	56	13.3	100	NW	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Plymouth. Portsmouth, N. H	30.09	764.3	54	12.2	54	12.2	74	NW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Drizzling.....	
Powhatan, Portsmouth, N. H	30.02‡	762.5‡	.....	.....	53	11.7	80	N	.....	.....	4	.....	10	.....	E	0.25	6.3	.....	.....	Overcast.....	
Ranger. Hong-Kong, China	29.96	761.0	86	30.0	85	29.4	79	NE	.....	.....	1	.....	5	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas	29.96	761.0	74	23.3	74	23.3	95	E	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md	30.05‡	763.3‡	.....	.....	57.5	14.2	100	N	.....	.....	2	.....	8	.....	NE	0	0	.....	.....	Cloudy	
Saratoga, Philadelphia, Pa	29.98	761.5	.....	.....	57	13.9	69	NNW	.....	.....	1	.....	9	.....	NW	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.01	762.2	61	16.1	58	14.4	76	N	6	2.7	.....	.....	8	.....	NW	0	0	.....	.....	Cloudy.....	
Supply, Havre, France	29.91	759.7	65	18.3	66	18.9	84	SE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Misty.....	
Swatara, Boston, Mass	30.04‡	763.0‡	.....	.....	54	12.2	80	NNW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Trenton, N. 39° 34′, W. 10° 06′	29.98‡	761.5‡	.....	.....	67	19.4	100	WSW	.....	.....	2–3	.....	8	.....	S	0	0	Smooth	.....	Cloudy.....	
Tuscarora, N. 24° 50′, W. 112° 26′	29.75	755.6	76	24.4	76	24.4	86	WNW	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Vandalia, Cartagena, Spain	30.07‡	763.8‡	.....	.....	76	24.4	77	SW	.....	.....	1	.....	5	.....	NNE	.....	.....	.....	.....	Fair.....	
Wabash, Boston, Mass	.....	.....	.....	.....	50	10.0	79	NW	5	2.2	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the co operation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35° 07′, W. 146° 34′		30.26*	768.6*	70	21.1	95	SE			3		10		SE	Light	Smooth		Showery	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Olympia, W. T.		30.18*	766.6*	54	12.2	87	NNW			0		0			Blank			Hazy.	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jennlug.
S. S. Britannic, N. 51° 00′, W. 24° 35′		29.28*	742.4*	59	15.0	94	WNW			6		10k		NW	Blank	Mod'ate	NW	Squally	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Anerold.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 40° 36′, W. 139° 15′		30.27*	768.8*	66	18.9	84	NE			1		k		E		Smooth	E	Misty	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 35° 00′, E. 142° 47′		29.95	760.7	65	18.3	94	N			4		9		NNE		3	NE	Squally	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 42° 28′, W. 60° 29′		29.71	754.6	59.5	15.3	69	ENE			6		10		ENE	4 hours	5	E	Raining	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4; nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours:	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 51° 8′, W. 32° 28′		29.47*	748.5*	54	12.2	94	WNW			3		10		WNW	Light	Mod'ate	Cross	Cloudy	Captain Sargent.
S. S. Ohio, N. 43° 11′, W. 60° 29′		29.86	758.4	59	15.0	88	NNE			5		10		NE	0	Rough	NE	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 14° 00′, W. 65° 40′		29.94	760.5	85	29.4	79	E	9	4.0			2k		E	0	Short sea		D. clouds	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 7, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.04	763 0	74.8	23.8	75	NNW			3		2			0	0	Fair	Kesxuche.
Algiers			29.93	760.3	77.0	25.0	80	NNE			1		2			0	0	Fair	Tourillere.
La Calle			30.02	762.6	80.2	26.8	76	ENE			3		6			0	0	Cloudy	Foufrede.
Tunis			30.09	764.2	85.3	29.6	50	E			5		0			0	0	Clear	Jacques.
Sfax			30.18	766.5	82.4	28.0		W			7		5			0	0	Cloudy	Gau.
Saida			30.03	762.8	83.3	28.5	27	S			7		3			0	0	Pretty fair	Herbin.
Tebessa			30.08	764.0	74.1	23.4	41	W			1		4			0	0	Cloudy	Watrin.
Geriville			30.04	762.9	70.5	21.4	59	SE			6		2			0	0	Fair	Brugniaux.
Laghouat			30.16	766.0	77.4	25.2	54	Calm			0		0			0	0	Clear	Bertrand.
Biskra			30.15	765.9	83.7	31.5	45	SE			1		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.61	752.0	30.15	765.9	61.2	16.2	69	NE			1		0			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.37	746.1	30.13	765.4	61.2	16.2	77	NE			1		0			0	0		Dr. Wierzbiski
Eperies	29.29	744.0	30.17	766.2	59.7	15.4	66	Calm			0		6cs			0	0		Julius Mikoltk.
Gratz	28.85	732.8	30.10	764.6	57.4	14.1	82	SW			2		0			0.004	0.10		Andreas Rospini.
Hermannstadt	28.74	730.0	30.21	767.4	60.4	15.8	52	NNW			0		2			0	0		Prof. A. Gottschling.
Kremsmünster	28.62	727.0	29.95	760.7	57.6	14.2	83	Calm			0		1			0	0		Prof. O. Wagner
Lemberg	29.22	742.3	30.22	767.6	52.5	11.4	92	SE			2		0			0	0		Dr. T. Stanecki.
Pola	30.05	763.3	30.16	766.1	67.1	19.5	71	SSW			1		4cs			0	0		I.R.Hydrographic Office
Szathmar	29.81	757.1	30.27	768.9	60.8	16.0	54	SE			1					0	0		Julius Csics, S. J.
Szegedin	29.00	750.5	30.18	766.5	64.0	17.8	53	Calm			0		0			0	0		Karl Stancel.
Trieste	30.08	764.0	30.18	766.6	68.0	20.0	79	Calm			0		0			0	0		P. Busin.
Vienna	29.34	745.1	30.04	763.0	62.8	17.1	61	SSE			3		0			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.39	721.1	29.87	758.8	58.6	14.9	86	SSW			1		10			0.102	2.6		Prof. M. Passau.
Brussels	29.57	751.0	29.76	755.9	64.2	17.9	77	SSW			4	4	6	S	SW	0.138	3.50		Royal Observatory
Furnes	29.71	754.5	29.78	755.1	64.8	18.2	75	SW			4		7			0	0		M. E. de Cae.
Maeseyck	29.69	754.0	29.82	757.3	65.6	18.6	74	S			2		9			0.020	0.5		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

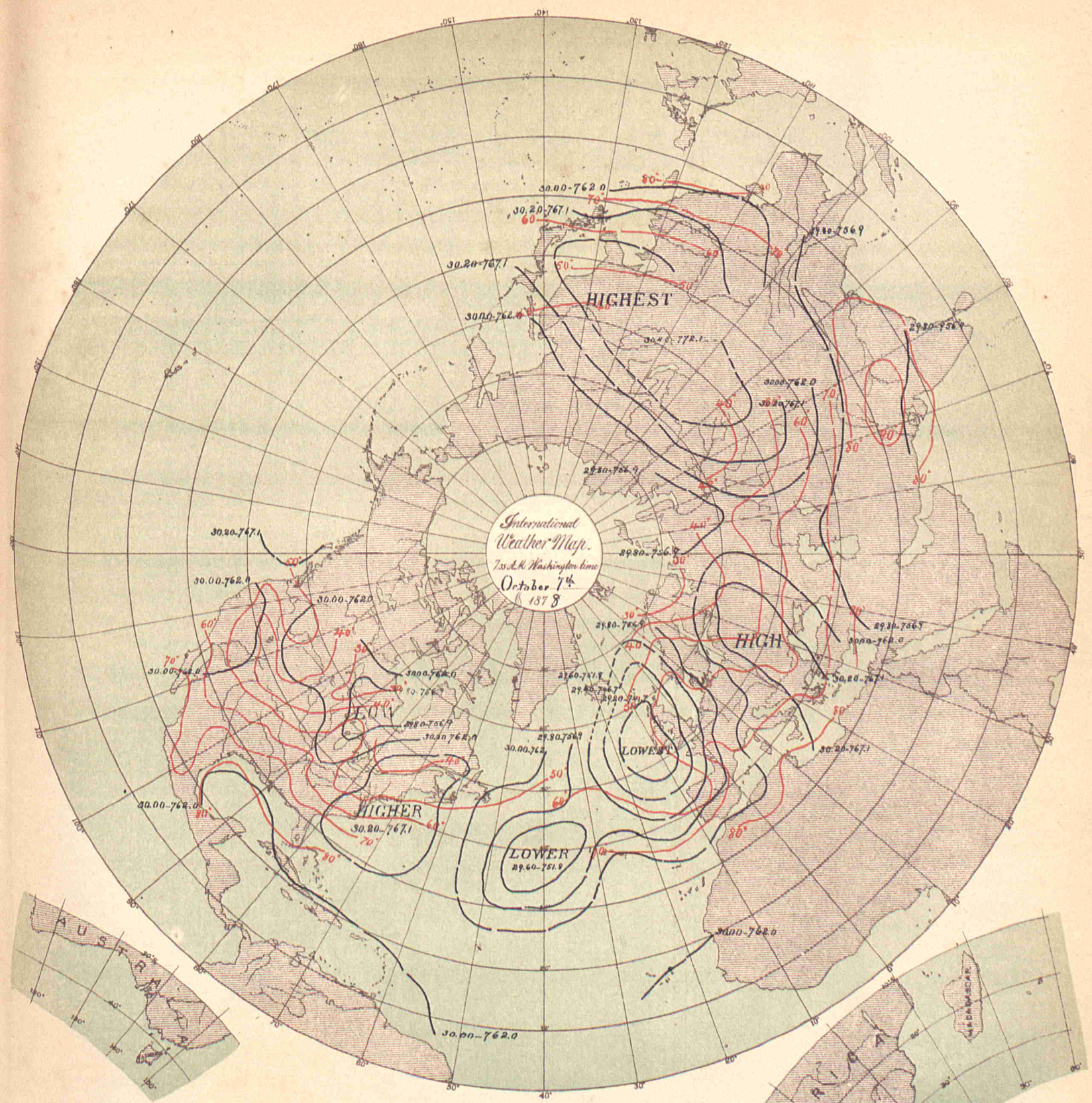
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen								S					9			0.025	0.64	Misty	W. Boswell.
Ardrossan	29.28	743.7	29.30	744.2	59	15.0		SE			4		7					Showery	George Carrick.
Armagh, Observatory			29.22	742.2	60.3	15.7		S	18	8.0			9					Squally	S. Call.
Bidston, (Liverpool Obs.)			29.39	746.6	62.4	16.9		SSE	17	7.6			5					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.04	737.6	29.43	747.5	62.4	16.9		SE			2		5			0.13	3.3	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.95	760.7	29.98	761.5	80.5	26.9		NE			2		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.56	750.8	68.0	20.0		S			2		5			Blank	Blank	Threatening	H. Todd. [H. C.
Cardington			29.57	751.1	66.0	18.9		S			2		4					D. clouds	John McLaren.
Chatham, School M. E.	29.50	749.3	29.62	752.3	63.2	17.3		SW			3		7					D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	27.96	710.7	29.42	747.3	56.0	13.3		SW			4		10					Rain and fog	Alexander Watt.
Donaghadee	29.28	742 4	29.26	743.2	60	15.6		SSW			6		10					Overcast	J. Mac Gowan.
Dover	29.62	752.3	29.64	752.8	62	16.7		WSW			5		5					⅗ clouded	J. Costello.
Falmouth, Observatory	29.08	738.6	29.30	744.2	59.5	15.3		SSE			6		10					Raining	The Staff.
Fort Napier, (Natal)	27.46	697.5	29.78	756.4	80.5	26.9		NE			2		5					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.72	754.9	29.95	760.7	75.5	24.2		W			0		4					Raining	
Galway, Queen's College			29.06	738.1	60	15.6		SSE			4		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.97	761.2				W			3		2					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.12	739.6	29.32	744.7	60.7	15.9		S			6		10					Threatening	D. G. Maclean.
Great Yarmouth	29.61	752.1	29.62	752.3	64	17.8		SSW			4		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.43	747.5	29.59	751.6	66.7	19.3		SW			3		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.30	744.2	29.52	749.8	61.5	16.4		SSE			6		8					Raining	Dr. S. E. Hoskins, F. R. S.
Helston			29.30	744.2	61	16.1		SE			7		10n			0.9	2.29	Thunder-storm	M. P. Moyle.
Holyhead	29.26	743.2	29.31	744.5	63	17.2		S			5		8					D. clouds	John Tilston.
Jersey	29.29	744.0	29.57	751.1	63.2	17.3		S			6		10					Overcast	J. Fisher.
Kew, Observatory	29.55	750.6	29.59	751.6	64.9	18.3		S	23	10.3			6					D. clouds	The Staff.
Kingstown	29.24	742.7	29.26	743.2	61	16.1		SSE			3		9					Overcast	George Mitchell.
Leicester, Museum			29.50	749.3	64.0	17.8		SW			4		1					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	30.06	763.5	30.13	765.3	77	25.0		SE			1		3k					Blue sky	Sergt. Beckett.
Nairn	29.21	741.9	29.30	744.2	63	17.2		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.07	763.8	80.5	26.9		NE			2		7					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.34	745.2	29.53	750.0	67.1	19.5		S			4		4k		S	0.102	2.59	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.97	735.8	29.47	748.5	64.3	17.9		S			5–6		7					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.54	750.3	64	17.8		S			5		3					Blue sky	H. E. Bellamy.
Plymouth	29.32	744.7	29.40	746.7	60.6	15.9		SE			5		10					Overcast	John Merrifield.
Roche's Point	29.02	737.1	29.06	738.1	57	13.9		S			6		10					Raining	W. Kennedy.
Saint Ann's Head	29.13	739.9	29.25	743.7	60	15.6		SE			6		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys)			29.35	745.5	57.1	13.9		SSE	20	8.9			7					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.12	765.0	67.0	19.4		NNE			3		3			Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.22	742.2	29.49	749.0	64.3	17.9		S			4		4			0	0	Blue sky	W. F. Cooper.
Silloth, Rectory	29.34	745.2	29.37	746.0	68.0	20.0	62	SW			3		0			0.040	1.02	Blue sky	C. Edith Redford.
Stonyhurst, Observatory	29.04	737.6	29.44	747.8	61.5	16.4		SE			4		8					Squally	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.38	746.2	29.59	751.6	63.3	17.4		S			2–3		5			Blank	Blank	D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso	29.27	743.4	29.33	745.0	61	16.1		SSE			2		9					Gloomy	John Trotter.
Truro, Royal Institution			29.24	742.7	62	16.7		S			8		10					Raining	W. Newcombe.
Valencia, Observatory	29.00	736.6	29.02	737.1	57.7	14.3		SE	19	8.5			10					Heavy rain	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.82	757.4	52.0	11.1	88	NW			2		0			0	0		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.4	72.3	22.4	56	SSE	22.5	10.1		0	4		SSE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.87	758.7	29.96	761.0	50.1	10.1	85	ESE	4	1.8			7			0	0	Lunar halo	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 39° 0′, W. 69° 37′			30.28	769.1	65	18.3		NNE			4		6			5	E	D. clouds	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 19° 36′, W. 59° 0′			30.01	762.2	85	29.4					4		5				Cross	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller, N. 51° 30′, W 8° 55′			29.03	737.3	58	14.4		ESE			6		10					Raining	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity Miles per hour.	WIND. Velocity Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas																			
San José	26.22	666.0	29.94	760.5	67.6	19.8	92	SE			2	10s				0	0		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.81	757.1	29.85	758.3	55.8	13.2	82	SE			4		10						
Fanöe	29.71	754.7	29.73	755.2	60.3	15.7	79	SSE			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.38	744.9	29.36	745.8	53.4	11.9	96	Calm			0		10					Foggy	
Vestervig	29.61	752.1	29.78	756.4	59.0	15.0	96	SSE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.26	743.3	29.82	757.3	63.0	17.2	83	SW			3		5		NE	0.563	14.3	Cloudy	Collignon, Director.
Amiens, Normal School	29.62	752.4	29.65	753.0	66.6	19.2	77	SE			2		2		NE	0.118	3.0	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	29.96	761.0	30.04	763.0	58.5	14.7	98	NNE			1				SSE	1.77	45.		M. Giraud, Director.
Bar-sur-Seine	29.31	744.4	29.85	758 2	63.9	17.7	78	S			1		10		WSW	0.055	1.4	Covered	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.48	748.9	29.76	756.0	64.2	17.9	69	SSW			2		2		SSW	0.049	1.25	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.07	738.3	29.93	760.2	65.5	18.6	57	SW			6		10		SW	0	0	Covered	Normal School.
Bourg-en-Bresse, N. School	29.00	736.0	29.99	761.8	61.7	16.5	72	S			3		5cs		S	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.29	744.0	29.84	757.8	67.1	19.5	72	SW			1		2n		SW	0.20	5.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.10	739.2	29.35	745.4	63.3	17.4	80	SSW			8		10		SSW	0.069	1.75	Stormy	The Staff.
Carcassonne, Normal School	29.43	747.4	29.82	757.5	74.5	23.6	62	E			4		5	E	E	0	0	Cloudy	Septembre, Director.
Caen	29.56	750.8	29.59	751.6	68.4	20.2	61	SSW			6		1		SSW	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.13	740.0	29.68	753.8	67.3	19.6	94	SSW			4		1		E	0.08	2.		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.52	749.8	29.83	757.7	65.1	18.4	84	W			3		8			0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.52	724.5	29.82	757.5	71.6	22.0	50	SE			2		2		S	0.335	8.5	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.05	737.8	29.91	759.8	62.1	16 7	87	S			3		kn		S	0.04	1.		Dr. Coulet, Director.
Commune de Gréasque*	28.95	735.2	30.00	764.2	69.4	20.8	67	SE			6		8	SE	SE	0	0	¾ covered	M. Kina.
Grenoble, Normal School	29.18	741.2	29.94	760.4	61.2	16.2	91	NE			1		5k		SW	0	0	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.30	746.6	29.89	754.2	65.3	18.5	67	SW			3		2		SW	0.091	2.3	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.02	737.1	29.91	759.8	64.0	17.8	65	SSE			4		10		SW	0	0	Covered	Baudry, Director.
Lorient, Naval Observatory	29.44	747.8	29.54	750.3	64.4	18.0	80	SSE			8				S	0.197	5.0		T. Carré, Director.
Mâcon, Normal School	29.89	759.3	29.93	760.2	57.2	14	93	WSW			3		10			0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.87	733.2	29.89	759.2	63.3	17.4	74	S			3		10kn		SW	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.79	756.7	29.99	761.8	60.4	15.8	29	S			4		10		S	5.149	130.75	Covered	Boyer, Director.
Privas, Normal School	28.97	735.8	30.03	762.7	59.0	15	86	SW			1		8	N	SW	0.67	17.	Very cloudy	M. Cantier.
Puy de Dome (Summit)	25.00	636.5			52.9	11.6	78	SW			3		8		SW	0.236	6.0		Alluard, Director.
Rochefort, Naval Obs'y	29.71	754.5	29.74	755.3	71.1	21.7	70	S			2		5			0.08	2.	¾ covered	T. Decante, Director.
Rouen, Normal School	29.60	751.7	29.68	753.8	69.4	20.8	51	SSE			3		2		S	0.492	12.5	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)			29.56	750.8	66.6	19.2	68	SSE			3		5		SSW	0.236	6.00	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.61	752.0	29.77	756.2	68.9	20.5	56	S			2		3		SSW	0.016	0.4		E. Renou.
Tarbes, Normal School	28.87	733.2	29.03	760.2	60.8	16	70	W			2		5	SW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.18	741.1	29.87	758.8	64.4	18	75	S			2		8		WSW	0	0	Very cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.89	759.1	29.91	759.8	81.3	27.4										0.75	19.		L'Abbé Marchési.
Lyons			29.68	753.9									10			0.098	2.5		L. Jays.
Marseilles, Observatory			30.01	762.2	72.5	22.5	65	ESE			3–4		8			Inap.	Inap.	Covered	The Staff.
Mont-Louis	24.91	632.6	30.22	767.6	61.7	16.5	42	SSW			7		2		SW	0	0		M. Cave.
Nice			30.14	765.6	69.6	20.9	77	E			4		10			0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.48	748.8	29.76	755.8	68.9	20.5	57	S			4		1		SSW	0.008	0.2		Marié Davy, Director
Perpignan			29.82	757.4	75.2	24.0	72	NE	9.3	4.17			0			0	0		Dr. Fues.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.44	570.0			50.9	10.5		SW			6–8		5			0.343	8.7	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.11	739.4	29.83	757.6	73.6	23.1	55	SE			6		1			0.134	3.47		The Staff.
Tours	29.54	750.2	29.73	755.2	70.2	21.2	57	W			3		1		W	0.201	5.1		C. Marquet.
Versailles			29.78	756.3	69.1	20.6	54	SW			3		2			0.041	1.05	Clear	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.6	30.21	767.2	67.3	19.6	78	NE	9.6	4.3		10ck				0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.96	760.9	61.0	16.1	72	SE			3		4	SE		0	0	Foggy	Prof. Dr. Hoh.
Berlin	29.76	755.8	29.93	760.1	66.2	19.0	60	S			1		6			0	0		Prof. Arndt.
Breslau	29.52	749.8	30.05	763.3	67.3	19.6	39	S			3		1			0	0		Royal University Obs'y
Carlsruhe	29.47	748.4	29.88	759.0	69.4	20.8	66	SW			2		9			0	0		Albert Senz.
Cassel	29.30	744.2	29.91	759.6	68.7	20.4	60	SW			2		8	SW		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.63	752.6	29.79	756.6	66.2	19.0	68	SW			3		10			0	0		Director Lose.
Emden	29.74	755.5	29.78	756.4	64.6	18.1	75	SW			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.55	750.6	29.91	759.6	66.7	19.3		SSW			2		6			0	0		Physical Society.
Friedrichshafen	28.60	726.3	30.02	762.5	60.8	16.0	78	SW			2		6	S		0	0		M. Wilhelm.
Hamburg	29.74	755.4	29.81	757.1	64.6	18.1	74	S			4		5cs			0.008	0.2	Fair	Captain F. Hegemann.
Kiel	29.78	756.4	29.80	756.8	59.9	15.5	81	S			1		4			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.10	764.5	30.18	766.6	55.6	13.1	60	SE			5		2			0	0		Prof. E Luther.
Köslin			29.94	760.5	62.4	16.9		E			4		1			0	0		H. Müller.
Leipsic, Observatory	29.54	750.2	29.95	760.6	67.6	19.8	59	S			2		8						Prof. Bruhns.
Memel, Naval School	30.15	765.8	30.20	767.0	52.7	11.5	59	S			4		1cs						Reinbrecht and Skalweit.
Neufahrwasser	30.09	764.2	30.10	764.6	59.0	15.0	56	SSE			4		4	W		0	0		A. Lothes.
Posen	29.78	756.4	30.07	763.7	63.7	17.6	51	SE			8		2			0	0		Dr. Magener.
Strassburg (in Alsace)	29.37	746.1	29.91	759.6	69.1	20.6	67	SSW			3		5	SW		0	0		Astronomical Observatory.
Stuttgart	28.98	736.2	29.89	759.2	70.3	21.3	50	W			1		6	W		0	0		Prof. Schoder.
Treves, (Trier)	29.32	744.7	29.84	757.9	64.0	17.8	80	S			2		7			0.032	0.83	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.47	723.1	29.95	760.8	54.9	12.7	87	SSW	2.9	1.3			10			0	0		Dr. Von Bebber.
Wustrow, Naval School	29.82	757.5	29.85	758.1	61.3	16.3	72	SE			4		4s			0	0		E. F. Schütz.
GERMAN NAVAL SERIES.																			

NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.81	757.2	30.20	767.1	66.0	18.9		NE			2.5							⅛ clear	Dr. J. F. J. Schmidt.

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee													0			0	0	Blue sky	
Deesa	29.36	745.9	29.83	757.8	90.0	32.2	48	S					0			0	0	Blue sky	
Bombay	29.82	757.5	29.86	758.5	84.5	29.2	82	WSW	8	3.6			10	WSW	S	0	0	Overcast	
Poona	27.87	707.9	29.88	758.9	77.6	25.3	70	W					10		W	0	0	Overcast	
Lahore	29.01	736.9	29.75	755.7	81.0	27.2	40	NE	5.1	2.3						0	0	Misty	
Belgaum	27.35	694.6	29.90	759.6	72.7	22.6	84	W	6	2.7			7	N		0	0	D. clouds	
Roorkee	28.79	731.2	29.87	763.7	85.8	29.9	43	NW	2	0.9						0	0		
Agra	29.13	739.9	29.68	753.8	93.6	34.2	28	NW					3		NW			Thunder-storm	
Nagpur	28.73	729.7	29.76	755.9	84.6	29.2	58	Calm	2.6	1.2			5		E	0	0	D; clouds	
Lucknow	29.29	743.9	29.65	753.1	89.4	31.9	51	Calm	1.0	0.4						0	0	Blue sky	
Allahabad	29.36	745.7	29.66	753.4	84.5	29.2	63	Calm	1.2	0.5			0			0	0	Blue sky	
Patna	29.46	749.0	29.67	753.5	86.4	30.2	68	W	0.4	0.2			0			0	0	Blue sky	
Hazaribagh	27.70	703.5	29.69	754.2	80.0	26.7	73	W	6.2	2.8			1			0	0		
Cuttack	29.63	752.7	29.72	754.8	87.1	30.6	74	Calm	1.5	0.7			0			0.08	2.0	Blue sky	
Calcutta (Alipore)	29.68	753.9	29.70	754.5	83.7	28.7	91	S	2.0	0.9			8			0	0	D. clouds	
Goalpara	29.30	744.2	29.69	754.0	77.4	25.2	85	W	4.1	1.8			9			0.85	51.6	D. clouds	
Chittagong	29.69	754.2	29.78	756.5	79.4	26.3	93		8.7	3.9						0	0		
Sibsagar	29.37	746.0	29.70	754.5	78.3	25.7	90	ENE	4.0	1.8			10	W	W	0.12	3.0	D. clouds	
Jubbulpore	28.41	721.6	29.76	755.9	84.8	29.3	56	Calm	2.3	1.0			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,851 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.77	756.2	30.18	766.5	65.7	18.7	61	S	0.7	0.3	.....	.....	3	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	30.06	763.5	30.17	766.3	66.4	19.1	66	Calm	0	0	.....	.....	9	S	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.98	761.5	30.17	766.3	65.8	18.8	63	ENE	0	0	.....	.....	5	W	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.84	732.6	30.15	765.8	68.0	20.0	71	SSW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.62	752.4	30.13	765.4	69.6	20.9	66	E	.....	.....	2	.....	8	SSE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.24	742.8	30.15	765.7	64.8	18.2	76	NNW	2.5	1.1	.....	.....	9	W	.....	0.083	2.1	.....	Prof. P. F. Denza.
Mondovi	28.22	716.8	30.11	764.9	61.9	16.6	75	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.91	759.7	30.13	765.3	69.1	20.6	71	NE	.....	.....	6	.....	10	E	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.93	761.0	30.15	765.8	71.2	21.8	58	SE	5.6	2.5	.....	.....	10	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.84	757.8	30.15	765.8	69.1	20.6	60	ESE	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.91	759.5	30.17	766.3	72.0	22.2	54	WNW	.....	.....	2	.....	10	SSW	.....	0	0	.....	Cav. F Meucci
Leghorn	30.01	762.3	30.10	764.4	72.3	22.4	61	S	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Urbino	28.63	727.2	30.17	766.3	66.4	19.1	48	SW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Luigi Guidi.
Rome	30.02	762.4	30.19	766.8	74.3	23.5	38	W	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Prof. P. Serpieri
Naples, O. U	29.99	761.8	30.19	766.8	74.8	23.8	40	S	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P G. S. Ferrari.
Lecce	29.92	759.9	30.17	766.3	69.8	21.0	65	NNW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Prof. L. Palmieri.
Cagliari	29.88	759.0	30.07	763.8	77.0	25.0	68	E	.....	.....	2	.....	6	W	.....	0	0	.....	Prof. C. De Giorgi.
Cosenza	29.31	744.5	30.19	766.7	72.7	22.6	68	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Palermo	29.92	760.0	30.17	766.3	73.2	22 9	61	ENE	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. F. D. Conti.
Syracuse	30.13	765.2	30.20	767.0	72.3	22.4	70	E	8.1	3.6	.....	.....	5	WSW	.....	0	0	.....	Prof. G. Cacciatore.
Sub-Series.																			Prof. V. Giuliano.
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	30.00	762.0	30.19	766.8	65.8	18.8	58	NE	10.2	4.6	.....	.....	10ck;cs	W	.....	0.225	5.72	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	30.22	767.6	30.29	769.3	52.0	11.1	86	SE	4.4	2.0	.....	.....	3ck;s	.....	.....	0.010	0.25	Fair	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.2	18.4	86	N	.....	.....	1	8clk	2s	.....	.....	0.203	5.4	Very cloudy	P. Ceballos.
Guadalajara	25.07	636.7	30.02	762.4	60.8	16.0	70	Calm	.....	.....	0	.....	9	.....	SE	0	0	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.43	620.7	29.99	761.8	60.8	16.0	84	W	.....	.....	1	8c	2s	SW	Calm	0	0	Covered	Prof. M. Leal.
Mexico	23.12	587.1	30.10	764.4	55.8	13.2	86	Calm	0	0	.....	0	10k	.....	.....	0.31	7.8	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	55.4	13.0	89	Calm	.....	.....	0	3c	0	SW	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpam	29.99	761.0	29.97	761.3	74.3	23.5	95	WNW	.....	.....	3	8	2	N	NW	0.741	18.8	Rainy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.15	767.8	53.0	11.7	68	E	.....	.....	5	4	4	W	E	0	0	Misty	G. Barroeta, M. D.
Vera-Cruz	29.07	761.2	30.00	761.9	79.7	26.5	84	NW	3.1	1.4	.....	.....	10sk	.....	.....	0.166	4.2	Covered	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.2	53.6	12.0	87	NE	0.9	0.4	.....	2	2	Calm	Calm	0.532	13.50	.....	Prof. P. Spina.
Durango	24.23	615.5	30.06	763.4	64.0	17.8	90	Calm	.....	.....	0	0	4ks	.....	.....	0.256	6.5	Misty	M. V. de Leon, C. E.
Colima	28.35	720.1	29.98	761.4	77.0	25.5	82	Calm	0	0	.....	5	4	N	NE	0.146	3.7	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.73	755.2	29.73	755 2	64.0	17.8	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.69	754.0	29.74	755.4	64.2	17.9	.....	S	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Helder	29.70	754.3	29.70	754.3	61.0	16.1	.....	SSW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.72	754.8	29.72	754.8	64.0	17.8	88	SSW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.71	754.7	29.76	755.9	62.6	17.0	83	SSW	.....	.....	4	.....	10	.....	.....	0	0	Dull	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.54	750.4	29.60	751.8	64.8	18.2	52	S	12.3	5.5	.....	.....	4	.....	.....	0.240	6.1	.....	
Brönö	29.62	752.4	29.66	753.4	52.5	11.4	83	SW	9	4	.....	.....	10	.....	.....	0.118	3.0	Light rain...	
Christiania	29.70	754.4	29.85	758.1	52.2	11.2	94	SW	0	0	.....	.....	10	.....	.....	0.098	2.5	....	
Tromsö	29.81	757.1	29.85	758.2	28.0	— 2.2	79	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.84	757.9	30.03	762.7	69.1	20.6	83	NW	4.3	1.9	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.97	735.7	29.98	761.4	68.4	20.2	53	SSW	12.5	5.6	.....	.....	10	SW	.....	0.051	1.3	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.01	762.3	30.10	764.5	73.9	23 3	61	SW	11.9	5.3	.....	.....	7	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.58	751.2	29.93	760.2	67.1	19.5	81	SSW	21.0	9.4	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.95	760.6	30.02	762.4	70.5	21.4	70	NE	10.5	4.7	.....	.....	5	.....	.....	0.059	1.5	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	I. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	1	NE	D. Clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....
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Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without *distinguishing between upper and lower clouds*; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.80	757.0	29.91	759.6	75.9	24.4	68	SSW	2.2	1.00	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.68	753.8	29.73	755.2	69.1	20.6	64	S	10.6	4.76	.....	10	.....	.....	.....	0.287	7.3	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.91	683.4	.....	.....	57.6	14.2	82	S	14.2	6.35	.....	10	.....	.....	.....	0.366	9.3	Covered	Domingo Martin y Perez
Madrid, Royal Observatory	27.75	704.8	29.94	760.4	64.0	17.8	56	SW	18.6	8.33	.....	0	10	.....	.....	Inap.	Inap.	Covered	The Staff.
Murcia, Met. Obs'y	29.80	756.9	29.95	760.6	81.5	27.5	73	NW	2.6	1.17	.....	1	3	NNW	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.69	728.7	29.58	751.3	53.6	12.0	92	SW	9.3	4.17	.....	.....	10	.....	.....	1.189	30.2	Raining	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.1	30.03	762.7	79.2	26.2	85	E	8.7	3.9	.....	8ck	1k	W	.....	0.051	1.3	.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.4	30.04	762.9	71.4	21.9	74	WSW	8.5	3.8	.....	2	7	W	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	82.4	28.0	99	NE	0	0	.....	3c	3k	E	E	0	0	D. clouds	Leonardo de Tejada, Ch't Eng't

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 886 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.6 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.85	758.3	29.89	759.3	36.7	2.6	.....	E	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.78	756.5	29.84	757.8	44.2	6.8	81	Calm	.....	.....	0	.....	10	.....	.....	0.004	0.1	.....	
Hernosand	29.75	755.6	29.80	756.9	51.8	11.0	87	Calm	.....	.....	0	.....	9	.....	.....	0.106	2.7	Raining	
Stockholm	29.82	757.5	30.00	762.0	52.5	11.4	81	WNW	.....	.....	2	.....	7	.....	.....	Inap.	Inap.	....	
Wisby	30.01	762.3	30.07	763.8	56.1	13.4	60	SSW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.80	758.5	29.94	760.4	53.1	11.7	75	SSW	.....	.....	.....	.....	8	W	.....	0.004	0.10	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	727.6	30.00	763.5	57.9	14.4	74	NNE	.....	.....	1	.....	10	.....	.....	0.217	5.5	Raining.....	The Observatory.
Zurich	28.41	721.6	30.01	762.3	64.9	18.3	60	W	.....	.....	4	.....	7	.....	SW	0	0	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.3 mm.; Thermometer, —0.1 cent.; Relative Humidity, +5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.18	766.5	62.6	17.0	62	N	20	9.0	.....	.....	5	.....	N	0.512	13.0	.....	The Observatory.
Valona	.....	.....	30.23	767.9	70.7	21.5	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.78	756.4	29.89	759.3	83.1	28.4	52	W	.....	.....	2	.....	5ks	.....	SW	0	0	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.93	760.2	30.24	768.1	47	8.3	.....	Calm	0	0	.....	0	5s	.....	W	0.07	1.8	Clear.....	W. R. Bigg.
*Chatham, N B	30.15	765.8	30.21	767.3	43	6.1	87	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	G. A. Blair.
Charlottetown, P. E. Island.	30.10	764.5	30.15	766.8	53	11.7	67	NW	6	2.7	.....	0	2k	.....	NW	0	0	Fair.....	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.24	768.1	40.8	4.9	94	W	.....	.....	1	1cs	0	.....	.....	0.026	0.66	Clear.....	James Smith, M. A.
Dalhousie, N. B	30.04	763.0	30.20	767.1	44	6.7	84	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy.....	H. A. Johnson.
Esquimault, B. C	29.99	761.7	30.04	763.0	46.3	7.9	100	Calm	.....	.....	.....	7cs	0	.....	.....	0.07	1.8	Fair.....	W. H. Bevis.
*Father Point, Quebec	30.17	766.3	30.20	767.1	43	6.1	94	SW	9	4.0	.....	.....	Fog	.....	Calm	0	0	Foggy	J. McWilliams.
Fredericton, N. B	30.19	766.8	30.25	768.3	41.2	5.1	90	NW	4.0	1.8	.....	0	0	.....	.....	0	0	Clear.....	Prof. Harrison.
*Fort Garry Manitoba	28.99	736.3	29.83	757.7	38	3.3	100	NW	2	0.9	.....	5k	5n	NW	NW	0.020	0.51	Cloudy	James Stewart.
Granton, Ontario	29.90	736.0	30.11	764.8	44	6.7	92	SE	.....	.....	1	1c	0	SW	.....	Inap.	Inap.	Clear.....	James Grant.
*Halifax, N. S	30.00	762.0	30.14	765.5	50	10.0	87	NW	8	3.6	.....	0	2ks	.....	NW	0.193	4.91	Fair.....	F. Allison, M. A.
Hamilton, Ontario	29.82	757.4	30.20	767.1	38.3	3.5	89	W	.....	.....	2	10cs	0	.....	.....	0	0	Overcast.....	Geo. Dickson, M. A.
Heart's Content, N. F	29.81	757.2	29.83	757.7	44	6.7	84	NE	.....	.....	3	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.91	759.7	30.25	768.3	48	8.9	85	SE	7	3.1	.....	5k	0	SW	.....	0.02	0.5	Fair.....	S. Woods, M. A.
Little Glace Bay, N. S	30.00	762.0	30.04	763.0	54.0	12.2	75	N	10	4.5	.....	6k	0	N	.....	0	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	30.04	763.0	30.25	768.3	46	7.8	91	SW	12	5.4	.....	0	2ks	.....	.....	Inap.	Inap.	Clear.....	C. H. McLeod, C. E
*Parry Sound, Ontario	29.44	747.8	30.15	765.8	43	6.1	87	S	8	3.6	.....	2cs	0	W	.....	0	0	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.46	748.3	30.26	768.6	35.7	2.1	90	W	.....	.....	0	2ck	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.47	748.5	30.16	766.1	52	11.1	79	S	10	4.6	.....	10ck	0	SW	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	30.03	762.7	30.08	764.0	53.3	11.8	.....	NW	7	3.1	.....	.....	.....	.....	.....	0	0	Fine....	Peter Grant.
Port Stanley, Ontario	29.47	748.5	30.11	764.8	53	11.7	58	SE	24	10.7	.....	.....	10ks	.....	SW	0	0	Cloudy.....	M. Payne.
*Quebec, Quebec	29.91	759.7	30.24	768.1	44	6.7	92	Calm	0	0	.....	Haze	Fog	.....	.....	0	0	Hazy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.73	755.1	30.21	767.3	35	1.7	100	SE	2	0.9	.....	.....	Fog	.....	SE	0	0	Foggy.....	W. H. McIntyre.
St. Andrews, N. B	30.18	766.6	30.24	768.1	46	7.8	83	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	Dr. Gove.
St. John, N. B	30.08	764.0	30.24	768.1	46	7.8	84	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.11	764.8	42	5.6	81	SE	8	3.6	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy.....	K. Stewart.
Stayner, Ontario	29.36	745.7	30.16	766.1	40	4.4	82	SE	5	2.2	.....	5c	0	SW	.....	0	0	Fair.....	R. J. Cole.
Stratford, Ontario	28 85	732.8	30.15	765.8	42.3	5.7	88	SE	7.0	3.1	.....	2cs	2s	W	.....	0	0	Fair.....	C. J. MacGregor, M. A
*Sydney, C. B	30.03	762.7	30.06	763.5	54	12.2	68	NW	7	3.1	.....	2c	2ks	.....	N	0	0	Fair.....	T. C. Hill.
*Toronto, Ontario	29.81	757.2	30.20	767.1	42	5.6	92	NE	3	1.3	.....	5cs	2s	W	W	0	0	Fair.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oran.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	43.0	6.1	96	NE	.....	.....	.....	.....	10	.....	.....	0.04	1.0	Overcast.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From —	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From —	Clouds. Direction. Lower. From —	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.06	763 5	30.30	769.6	40	4.4	91	SE	1	0.4	.....	.....	Fog	.....	.....	0	0	Dense fog	
Alpena, Michigan	29.31	744.6	29.95	760.7	52	11.1	53	S	25	11.2	.....	.....	10s	.....	SW	0	0	Cloudy	
Atlanta, Georgia	28.99	736.3	30.12	765.0	62	16.7	88	E	7	3.1	.....	.....	10s	.....	Calm	0	0	Cloudy	
Atlantic City, New Jersey	30.27	768.8	30.29	769.4	50	10.0	86	NW	4	1.8	.....	2c	0	Calm	.....	0	0	Clear	
Augusta, Georgia	30.00	762.0	30.19	766.8	64	17.8	89	E	2	0.9	.....	5ck;k	2s;fg	NW ;SE	Calm	0	0	Fair	
Baltimore, Maryland	30.25	768.3	30.30	769.6	50	10.0	65	N	4	1.8	.....	8c	Sm'e	NW	Calm	0	0	Fair	
Barnegat, New Jersey	30.27	768.8	30.29	769.4	52	11.1	86	N	8	3.6	.....	2c	0	Calm	.....	0	0	Clear	
Bismarck, Dakota	28.12	714.2	29.98	761.5	38	3.3	72	Calm	0	0	.....	Sm'e	Sm'e	.....	.....	0	0	Dense smoke	
Boerne, Texas	28.61	726.7	.....	.....	67	19.4	79	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.18	690.4	30.14	765.5	45	7.2	67	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.15	765.8	30.31	769.9	46.5	8.1	81	NW	5	2.2	.....	1c	Haze	Calm	NW	Inap.	Inap.	Hazy	
Bracketville, Texas	28.92	734.6	29.91	759.7	73	22.8	76	SE	5	2.2	.....	5cs	0	Calm	.....	0	0	Fair	
Breckenridge, Minnesota	28.90	734.0	29.93	760.2	30	—1.1	100	SW	8	3.6	.....	10s	0	W	.....	0	0	Cloudy	
Brownsville, Texas	29.95	760.7	30.02	762.5	74	23.3	90	Calm	0	0	.....	8cs	0	NW	.....	0	0	Fair	
Buffalo, New York	29.48	748.8	30.20	767.1	41	5.0	82	SE	4	1.8	.....	2c	Sm'e	SW	Calm	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	66	18.9	46	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	30.05	763.3	30.32	770.1	48	8.9	78	S	5	2.2	.....	0	0	.....	.....	0.16	4.1	Clear	
Cairo, Illinois	29.62	752.3	30.01	762.2	60	15.6	82	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	.....	.....	.....	.....	47	8.3	48	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.23	640.8	30.03	762.7	65	18.3	22	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.29	769.4	48	8.9	43	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.43	696.7	30.00	762.0	38	3.3	63	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	65	18.3	63	NE	9	4.0	.....	2k	0	NE	.....	0	0	Fair	
Cape Henry, Virginia	30.23	767.8	30.25	768.3	63	17.2	52	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.23	767.8	30.25	768.3	68	20.0	65	E	16	7.2	.....	2k	5ks	W	W	0	0	Cloudy	
Cape May, New Jersey	30.26	768.6	30.29	769.4	51	10.6	72	NE	8	3.6	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.26	743.2	29.95	760.7	66	20.0	90	Calm	0	0	.....	0	5s	.....	S	0	0	Fair	
Charleston, South Carolina	30.16	766.1	30.23	767.8	71	21.7	90	Calm	0	0	.....	8c;cs	0	W	.....	0	0	Fair	
Cheyenne, Wyoming	24.04	610 6	29.98	761.5	46	7.8	26	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.22	742.2	29.91	759.7	51	10.6	65	SW	12	5.4	.....	8ck	0	W	.....	0	0	Fair	
Cincinnati, Ohio	29.43	747.5	30.08	764.0	61	10.6	68	SE	3	1.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Cleveland, Ohio	29.39	746.5	30.13	765.3	42	5.6	66	SE	10	4.5	.....	8cs	0	SW	.....	0	0	Fair	
Coleman City, Texas	28.23	717.0	29.86	758.4	64	17.8	89	SW	4	1.8	.....	2cs	0	Calm	.....	0	0	Fair	
Columbus, Ohio	29.22	742.2	30.07	763.8	46	7.8	68	SE	1	0.4	.....	5cs	Fog	Calm	Calm	0	0	Fair	
Concho, Texas	28.13	714.5	29.78	756.4	60	15.6	81	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.58	751.3	30.04	763.0	64	17.8	89	SE	6	2.7	.....	5k	0	SE	.....	0	0	Fair	
Davenport, Iowa	29.34	745.2	29.97	761.2	51	10.6	79	W	5	2.2	.....	4c	0	NW	.....	Inap.	Inap.	Fair	
Decatur, Texas	28.90	734.0	30.05	763.3	63	17.2	84	E	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Denison, Texas	29.28	743.7	30.07	763.8	61	16.1	94	NE	3	1.3	.....	.....	Fog	.....	Calm	Inap.	Inap.	Foggy	
Denver, Colorado	24.81	630.2	30.03	762.7	38	3.3	38	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.14	740.1	30.03	762.7	43	6.1	83	NW	5	2.2	.....	5c	Haze	NW	Calm	Inap.	Inap.	Fair	
Detroit, Michigan	29.38	746.2	30.05	763.3	50	10.0	65	S	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Dodge City, Kansas	27.47	697.7	29.78	756.4	46	7.8	100	SE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Dubuque, Iowa	29.24	742.7	29.94	760.5	47	8.3	77	NW	6	2.7	.....	Haze	Fog	NW	Calm	0	0	Fair	
Duluth, Minnesota	29.15	740.4	29.82	757.4	43	6.1	75	W	10	4.5	.....	0	2s	.....	W	0.02	0.5	Fair	
Eagle Pass, Texas	29.24	742.7	29.96	761.0	68	20.0	84	E	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
Eastport, Maine	30.18	766.6	30.25	768.3	48	8.9	70	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	69	20.6	90	E	.....	.....	1	5c	2s	Calm	.....	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	65	18.3	62	Calm	0	0	.....	0	5s	.....	Calm	0	0	Fair	
Erie, Pennsylvania	29.40	746.7	30.13	765.3	46	7.8	69	SE	16	7.2	.....	5c	0	W	.....	0	0	Cloudy	
Escanaba, Michigan	29.10	739.1	29.74	755.4	52	11.1	86	SE	16	7.2	.....	.....	10s	.....	SE	0.04	1.0	Cloudy	
Florence, Arizona	28.42	721.9	30.02	762.5	65	18.3	40	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.60	650.2	29.66	753.4	50	10.0	51	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	60	15.6	66	SW	4	1.8	.....	0	2ks	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.55	750.6	30.09	764.8	55	12.8	100	NW	3	1.3	.....	.....	Fog	Calm	Calm	0	0	Foggy	
Fort Griffin, Texas	28.76	730.5	30.01	762.2	60	15.6	88	Calm	0	0	.....	5ck	0	Calm	.....	0	0	Fair	
Fort McKavett, Texas	27.82	706.6	29.68	753.9	67	19.4	79	Calm	0	0	.....	0	5s	.....	SW	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.75	730.2	29.83	757.7	62	16.7	94	SE	5	2.2	.....	0	Fog	Calm	.....	0	0	Dense fog	
Fredericksburg, Texas	28.30	718.8	29.82	757.4	72	22.2	46	Calm	0	0	.....	2c	0	S	.....	0.03	0.8	Fair	
Galveston, Texas	30.00	762.0	30.04	763.0	78	25.6	73	S	2	0.9	.....	5ck	0	.....	.....	0.07	1.8	Fair	
Graham, Texas	28.95	735.3	29.98	761.5	63	17.2	89	Calm	0	0	.....	0	2ks	.....	Calm	0	0	Fair	
Grand Haven, Michigan	29.26	743.2	29.90	759.4	52	11.1	66	SW	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Indianapolis, Indiana	29.26	743.2	30.04	763.0	51	10.6	65	SE	2	0.9	.....	.....	10s	W	Calm	0	0	Cloudy	
Indianola, Texas	30.03	762.7	30.06	763.5	76	24.4	86	SE	7	3.1	.....	5c	0	.....	.....	0	0	Fair	
Jacksboro, Texas	28.88	733.5	30.00	762.0	60	15.6	94	E	5	2.2	.....	5ck	0	Calm	.....	0	0	Fair	
Jacksonville, Florida	30.13	765.3	30.16	766.1	72	22.2	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.36	745.7	29.97	761.2	52	11.1	93	W	7	3.1	.....	3c; cs	0	NW	.....	0.01	0.3	Fair	
Key West, Florida	30.01	762.2	30.04	763.0	81	27.2	74	E	13	5.8	.....	5cs	0	Calm	.....	0.28	7.1	Fair	
Kittyhawk, North Carolina	30.26	768.6	30.28	769.1	64	17.8	63	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.15	740.4	30.15	765.8	56	13.3	87	Calm	0	0	.....	.....	10s	.....	Calm	0.31	7.9	Cloudy	
La Crosse, Wisconsin	29.16	740.7	29.89	759.2	47	8.3	84	W	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	51	10.6	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.57	751.1	29.90	759.4	75	23.9	77	SE	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
Lead City, Dakota	24.72	627.9	29.99	761.7	44	6.7	52	S	12	5.4	.....	0	5s	.....	Calm	0	0	Fair	
Leavenworth, Kansas	29.20	741.7	30.05	763 3	48	8.9	93	Calm	0	0	.....	5c	Fog	N	N	0	0	Fair	
Los Angeles, California	29.59	751.6	29.93	760.2	58	11.7	93	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Louisville, Kentucky	29.49	749.0	30.05	763.3	51	10.6	65	SE	6	2.7	.....	8k	SW	SW	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.61	752.1	30.30	769.6	54	12.2	93	W	1	0.4	.....	.....	2s;sm'e	.....	Calm	Inap.	Inap.	Light rain	
Madison, Wisconsin	28.87	733.3	29.84	757.9	50	10.0	86	W	4	1.8	.....	0	10n	.....	Calm	Inap.	Inap.	Light rain	
Marquette, Michigan	28.97	735.8	29.66	753.4	51	10.6	72	S	16	7.2	.....	0	5s	.....	W	0	0	Fair	
Mason, Texas	28.40	721 3	30.12	765.0	63	17.2	88	NW	2	0.9	.....	8c	0	.....	S	0	0	Fair	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	SW	.....	0	0	Fair	
Milwaukee, Wisconsin	29.14	740.1	29.86	758.4	62	11.1	73	SW	12	5.4	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
Mobile, Alabama	30.07	763.8	30.11	764.8	70	21.1	90	S	3	1.3	.....	5c	0	W	.....	0	0	Fair	
Montgomery, Alabama	29.89	759.2	30.12	765.0	68	20.0	79	SE	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.13	765.3	42	5.6	83	N	2	0.9	.....	10cs	0	Calm	.....	0	0	Cloudy	
Mt. Washington, N. H.	23.94	608.1	30.30	769.6	27	— 2.8	77	W	5	2.2	.....	.....	Fog	.....	W	0.42	10.7	Foggy	
Nashville, Tennessee	29.56	750.8	30.09	764.3	59	15.0	88	E	1	0.4	.....	.....	10s	.....	SW	0.07	1.8	Cloudy	
New Haven, Connecticut	30.19	766.8	30.31	769.9	51	10.6	72	N	4	1.8	.....	2c	0	SW	.....	0	0	Clear	
New London, Connecticut	30.26	768.6	30.31	769.9	50	10.0	86	N	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
New Orleans, Louisiana	30.00	762.0	30.05	763.3	74	23.3	76	E	4	1.8	.....	5ck	0	SW	.....	0	0	Fair	
Newport, Rhode Island	30.25	768.3	30.30	769.6	51	10.6	79	N	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
New York, New York	30.14	765.5	30.32	770.1	51	10.6	65	NW	4	1.8	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.23	767.8	30.29	769.4	57	13.9	81	Calm	0	0	.....	2c	1lz';sm	Calm	.....	0	0	Fair	
North Platte, Nebraska	27.11	688.6	29.74	755.4	36	2.2	85	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	51	10.6	93	S	1	0.4	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Omaha, Nebraska	28.93	734.8	30.03	762.7	42	5.6	74	NW	3	1.3	.....	2c	Fog	Calm	Calm	0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instru-m'tal error and tem-perature. Inches.	Barometer. Correcte for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.94	760.5	30.27	768.8	46	7.8	77	S	5	2.2	.....	2c	0	Calm	.....	0.37	9.4	Fair	
Pembina, Dakota	28.97	735.8	29.82	757.4	31	— 0.6	89	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pa	30.28	769.1	30.33	770.4	50	10.0	58	N	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.76	730.5	.....	.....	61	16.1	45	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.89	452.3	30.10	764.5	25	— 3.9	38	NW	28	12.5	.....	8cs	0	NW	.....	0	0	Fair	
Pioche, Nevada	24.13	612.9	29.90	759.4	49	9.4	24	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.32	744.7	30.15	765.8	39	3.9	82	E	4	1.8	.....	5c	Fog	NW	Calm	0	0	Fair	
Port Huron, Michigan	29.39	746.5	30.06	763.5	49	9.4	64	SE	10	4.5	.....	.....	10ks	.....	SE	0	0	Cloudy	
Portland, Maine	30.23	767.8	30.28	769.1	49	9.4	78	Calm	0	0	.....	0	Fog	.....	.....	Inap.	Inap.	Clear	
Portland, Oregon	30.03	762.7	30.13	765.3	54	12.2	93	NW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.89	632.2	30.25	768.3	45	7.2	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.33	745.0	30.11	764.8	64	17.8	78	E	2	0.9	.....	0	0	.....	.....	0	0	Foggy	
Punta Rassa, Florida	30.09	764.3	30.11	764.8	75	23.9	77	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.50	750.8	29.91	759.7	61	16.1	50	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.85	758.2	30.06	763.5	78	25.6	65	N	.....	.....	1	8c	0	Calm	.....	0	0	Fair	
Rochester, New York	29.60	751.8	30.23	767.8	42	5.6	74	SW	5	2.2	.....	2cs	0	Calm	.....	Inap.	Inap.	Fair	
Roseburg, Oregon	29.57	751.1	30.15	765.8	44	6.7	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.82	757.4	29.90	759.4	58	14.4	76	S	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.46	748.3	30.03	762.7	57	13.9	81	SW	8	3.6	.....	0	5s	.....	Calm	0.06	1.5	Fair	
St. Marks, Florida	30.12	765.0	30.14	765.5	71	21.7	90	SE	8	3.6	.....	2c;k	2s	Calm	S	0	0	Fair	
St. Paul, Minnesota	29.06	738.1	29.89	759.2	43	6.1	75	W	5	2.2	.....	0	Sm'e	.....	.....	0.06	1.5	Clear	
Salt Lake City, Utah	25.70	652.8	30.02	762.5	49.5	9.7	55	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.37	746.0	29.94	760.5	68	20.0	95	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
San Diego, California	29.87	758.7	29.95	760.7	59	15.0	100	NW	4	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
Sandusky, Ohio	29.42	747.3	30.10	764.5	46	7.8	77	S	9	4.0	.....	10cs	0	N	.....	0	0	Cloudy	
Sandy Hook, New Jersey	30.28	769.1	30.31	769.9	55	12.8	68	E	4	1.8	.....	2c	Haze	Calm	Calm	0	0	Fair	
San Francisco, California	29.85	758.2	29.91	759.7	55	12.8	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	44	6.7	23	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.20	767.1	71	21.7	85	Calm	0	0	.....	5c	2ks	SW	S	0	0	Fair	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	66	18.9	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.37	619.0	.....	.....	47	8.3	48	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.21	767.3	30.25	768.3	71	21.7	75	E	16	7.2	.....	2ck	8ks	SW	SE	0	0	Cloudy	
Springfield, Massachusetts	30.18	766.6	30.31	769.9	46	7.8	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.98	685.3	29.98	761.5	60	15.6	59	SW	4	1.8	.....	4k	0	SW	.....	0	0	Fair	
Thatcher's Island, Mass	30.24	768.1	30.30	769.6	53	11.7	86	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.38	746.2	30.06	763.5	46	7.8	62	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	65	18.3	48	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	77	25.0	69	S	9	4.0	.....	2cs	2ks	SW	SE	0	0	Fair	
Umatilla, Oregon	29.62	752.3	.....	.....	59	15.0	48	W	8	3.6	.....	.....	8ks	.....	W	0	0	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	42	5.6	100	SW	.....	.....	9	.....	10n	.....	SW	.....	.....	Raining	
Uvalde, Texas	29.17	740.9	29 97	761.2	70	21.1	75	NE	4	1.8	.....	5c	0	SW	.....	0	0	Fair	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	70	21.1	90	SE	4	1.8	.....	5k	0	SE	.....	0	0	Fair	
Virginia City, Montana	24.20	614.7	29.68	753.9	52	11.1	47	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.57	751.1	29.94	760.5	57	13.9	63	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.19	766.8	30.31	769.9	47	8.3	77	N	2	0.9	.....	2c	Fog	W	Calm	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	52	11.1	60	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.16	766.1	30.24	768.1	66	18.9	78	E	3	1.3	.....	0	2s	.....	E	0	0	Fair	
Winnemucca, Nevada	25.72	653.3	30.08	764.0	38	3.3	54	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.24	768.1	30.29	769.4	52	11.1	86	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.70	730.5	30.10	764.5	32	0.0	84	W	1	0.4	.....	2cs	Fog	NW	Calm	0	0	Fair	
Yuma, Arizona	29.71	754.6	29.87	758.7	64	17.8	78	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.03	762.7	30.08	764.0	23.0	— 5.0	93	NW	11	4.9	.....	2c	0	N	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	30.00	762.0	30.02	762.5	81	27.2	82	SE	3.6	1.6	.....	8ck	0	Calm	.....	0.05	1.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.95	760.7	29.98	761.5	80	26.7	82	Calm	0	0	.....	0	2k	.....	S	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	85	29.4	76	E	4	1.8	.....	2c	4ks	E	.....	0.02	0.5	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.11	764.8	30.12	765.0	80	26.7	91	Calm	0	0	.....	5c	2ks	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.90	759.4	29.98	761.5	83	28.3	.....	NE	7.5	3.4	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762.2	30.01	762.2	84	28.9	83	E	.....	.....	1	0k	8ks	E	.....	0	0	½ cloudy	O. J. Hering
Medellin, Colombia, S. A	25.21	640.3	.....	.....	69.2	20.7	78	Calm	0	0	.....	1k	1ks	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I	29.80	756.9	30.11	764.8	75	23.9	95	S	.....	.....	4	k	k	.....	.....	Blank	Blank	.....	Robert Elworthy.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft.. or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft.. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.0 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.0 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.34	770.6	77	25.0	77	25.0	86	N	1	0.4			2		SW	0	0			Fair	
Navy Yard, Portsmouth, N.H	30.29‡	769.4‡			45	7.2	92	WNW	1	0.4			2			0	0			Clear	
Naval Hospital, Yokohama, Japan	30.19*	766.8*	61	16.1	55	12.8	74	N			3		4c;ck		NNW	0.19	4.8			Fair	
Adams. S. 41° 52′, W. 90° 12′	29.90	759.4	60	15.6	51	10.6	93	NW			3		8		NW			Long	NW	Cloudy	
Alaska, Valparaiso, Chili	30.26	768.6	61	16.1	58	14.4	82	Calm			0		2			0	0	Smooth		D. clouds	
Alliance, Volo, Turkey	30.24‡	768.1‡			65	18.3	68	SE			1		10		Calm					Threatening	
Ashuelot. Kobe, Japan	30.33	770.4	63	17.2	61	16.1	61	NNW			1		8		NNW			Smooth		Cloudy	
Canonicus, New Orleans, La	30.10	764.5	54	12.2	75	23.9	90	NE			2		8							Cloudy	
Colorado. New York, N. Y.	30.30‡	769.6‡			55	12.8	62	N	3	1.3			5		NE	0	0			Foggy	
Constitution, Havre, France					65	18.3	84	S			4		2		S					Clear	
Despatch, Volo, Turkey	30.23‡	767.8‡			65	18.3	68	SE			2		8		SE					Fair	
Essex, S. 36° 2′, W. 21° 30′	29.95	760.7	59	15.0	56	13.3	94	WSW			6		2		W			Rough	W	Clear	
Franklin, Norfolk, Va	30.36	771.1	66	18.9	59	15.0	88	Calm	0	0			2		Calm	0	0			Clear	
Gettysburg Valetta, Malta	30.11‡	764.8‡			79	26.1	100	SW			1		2		Calm	2.	51.	Smooth		Clear	
Guard. S. 14° 28′, W. 34° 19′	30.14	765.5	79	26.1	77	25.0	91	SSE			3		10		SSE			Long	S	Rainy	
Hartford, Rio de Janeiro, Brazil	30.19	766.8			73	22.8	67	NE	9.6	4.3			5		NE	0	0			Fair	
Marion, Trieste, Austria	30.09	764.3	71	21.7	72	22.2	59	W			1		0			0	0			Clear	
Michigan, Erie, Pa	30.06†	763.5†			46	7.8	62	ESE			6		8		SW					Cloudy	
Monocacy. Yokohama, Japan	30.26‡	768.6‡			56	13.3	87	NNW			0–1		2		NNW						
New Hampshire, Port Royal, S. C	30.36	771.1	78	25.6	76	24.4	73	S	13	5.8			5		S	0	0			Clear	
Onward, Callao, Peru	30.10†	764.5†			63	17.2	83	S			2		10					Long	W	Misty	
Palos, Tientsin, China	30.41	772.4	56	13.3	51	10 6	79	W			1		10							Overcast	
Passaic, Washington, D. C					45	7.2	92	NE			1		2		S					Clear	
Plymouth. N. 41° 18′, W. 68° 48′	30.35	770.9	59	15.0	59	15.0	65	ENE			2		2					Light	E	Clear	
Powhatan, Portsmouth, N. H	30.26‡	768.6‡			47	8.3	85	WNW	3.6	1.6			0			0.1	3.			Clear	
Ranger. Hong-Kong, China	29.92	760.0	81	27.2	80	26.7	70	NNE			3		8		Calm					Cloudy	
Rio Bravo, Brownsville, Texas	29.95	760.7	75	23.9	75	23.9	95	Calm			0		2		W					Fair	
Santee, Annapolis, Md	30.26‡	768.6‡			57	13.9	63	E			2		5		W	0	0			Clear	
Saratoga, Philadelphia, Pa	30.22	767.6			53	11.7	67	NNE			2		3			0	0			Clear	
St. Louis, League Island, Pa	30.16	766.1	53	11.7	53	11.7	73	NNE	1	0.4			2			0	0			Fair	
Supply, Havre, France	29.72	754.9	66	18.9	66	18.9	74	SSW			4		2		SSW					Clear	
Swatara, Boston, Mass	30.30‡	769.6‡			50	10.0	79	NW			2		0							Hazy	
Trenton, N. 38° 38′, W. 9° 47′	29.88‡	758.9‡			67	19.4	95	SSW			4–5		8		S	0	0	Mod'ate	SW	Squally	
Tuscarora, N. 26° 01′, W. 113° 34′	29.76	755.9	72	22.2	72	22.2	85	NW			1		0			0	0	Smooth		Clear	
Vandalia, Cartagena, Spain	29.98‡	761.5‡			74	23.3	76	SW			1		2		W					Clear	
Wabash, Boston, Mass					52	11.1	66	NW	3	1.3			0			0	0			Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 36° 11′, W. 151° 41′		30.19*	766.8*	68	20.0	100	S			4		10		SW	Mod'ate	Small	WNW	Drizzling	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T.		30.05*	763.3*	54	12.2	87	Calm			0		0						Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 49° 59′, W. 33° 28′		29.80*	756.9*	61	16.1	88	NW			4		2clk		WNW	0	Mod'ate	W	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 40° 05′, W. 133° 40′		30.18*	766.6*	68	20.0	79	NW			2		k		NW		Smooth	NW	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, Yokohama, Japan		30.28	769.1	57	13.9	75	N			3		6		N		Smooth		D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. *Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreessen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 40° 28′, W. 66° 37′		30.19	766.8	63.5	17.5	62	NNW			2		2		NW	0	2	E	Clear	Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 51° W. 40° 20'	.....	29.82*	757.4*	54	12.2	80	NNE	.....	.....	2	.....	8	.....	NNE	Light	Mod'ate	Cross	Cloudy	Captain Sargent.
S. S. Ohio, N. 44° 27' 15", W. 55° 53'	.....	29.91	759.7	57	13.9	87	NNE	.....	.....	5	.....	5?	.....	NE	Light	Mod'ate	NE	Clear?.....	Captain Morrison.
S. S. Pennsylvania	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Captain Harris.
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NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Randle.
S. S. Switzerland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jackson.
S. S. Vaderland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Nichols.
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ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Richardson.
S. S. Hibernian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 12° 05', W. 65° 49'	.....	29.92	760.0	85	29.4	76	E	8	3.6	.....	.....	2k	.....	E	0.02 in or 0.5 mm.	Short	.....	Clear.....	Capt. James Jorgensen.
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg'd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 8, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador								W			3		3					Pretty fair	Dr. Ollive.
Nemours			30.04	763.0	74.8	23.8	69	WNW			5		10			0	0	Pretty fair	Kesxuche.
Algiers			29.92	760.0	74.5	23.6	74	NW			1		7			0.264	6.7	Covered	Tourillere.
La Calle			30.00	762.0	84.7	29.3	62	SW			3		2			0	0	Very cloudy	Foufrede.
Tunis			29.97	761.3	90.0	32.2	31	S			6		5			0	0	Cloudy	Jacques.
Sfax			30.13	765.2	82.4	28.0		SW			3		2			0	0	Fair	Gau.
Saida			30.02	762.6	70.2	21.2	63	S			5		3			0	0	Pretty fair	Herbin.
Tebessa			30.03	762.8	75.2	24.0	46	SW			6		3			0	0	Pretty fair	Watrin.
Geriville			30.00	761.9	73.8	23.2	59	S			6		4			0	0	Cloudy	Brugniaux.
Laghouat			30.09	764.3	80.2	26.8	48	Calm			0		4			0	0	Cloudy	Bertrand.
Biskra			30.10	764.4	84.6	29.2	39	ESE			1		3			0	0	Pretty fair	Chanvaux.

NOTE—In the originals the distinction between the amount of upper and lower clouds is apparently not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.46	748.2	29.99	761.7	70.9	21.6	50	SW			4		0			0	0		Prof. Ivan Storlr.
Cracow, I. R. Observatory	29.20	741.6	29.95	760.7	64.8	18.2	65	ESE			1		1			0.008	0.2		Dr. Wierzbiski
Eperies	29.19	741.3	30.05	763.3	60.1	15.6	55	Calm			0		1cs			0	0		Julius Mikosik.
Gratz	28.70	729.0	29.93	760.2	62.1	16.7	78	SE			2		0			0	0		Andreas Rospini.
Hermannstadt	28.63	727.2	30.10	764.5	62.2	16.8	57	WSW			0		0			0	0		Prof. A. Gottschling.
Kremsmünster	28.49	723.7	29.82	757.5	54.3	12.4	87	NE			3		8			0	0		Prof. C. Wagner
Lemberg	29.05	737.9	30.03	762.8	58.1	14.5	91	S			2		0			0	0		Dr. T. Stanecki.
Pola	29.95	760.7	30.06	763.5	70.2	21.2	73	SE			4		6ks			0	0		I.R.Hydrographic Office
Szathmar	29.69	754.0	30.15	765.7	68.3	17.4	52	SE			3					0	0		Julius Csics, S. J.
Szegedin	29.78	756.5	30.06	763.4	68.0	20.0	64	S			1		3			0	0		Karl Stancel.
Trieste	29.98	761.4	30.08	764.0	68.4	20.2	83	Calm			0		3			0.354	9.0	Raining	P. Busin.
Vienna	29.21	741.9	29.91	759.7	62.4	16.9	71	SE			2		4			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.20	716.3	29.68	753.9	57.2	14.0	85	SW			2		10			0.185	4.7		Prof. M. Passau.
Brussels	29.38	746.2	29.57	751.1	61.0	16.1	83	SSW			4		10		SW	0.020	0.50		Royal Observatory.
Furnes	29.55	750.5	29.57	751.1	62.8	17.1	75	SSW			4		10			0.004	0.1		M. E. de Cae.
Maeseyck	29.50	749.3	29.63	752.6	64.6	18.1	80	S			2		9			0.244	6.2		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m't'al error and tem-perature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Aberdeen	29.03	737.3	29.13	739.9	56.9	13.8		SE	29	13.0			3			0	0	Squally	W. Boswell.
Ardrossan	28.94	735.1	28.96	735.6	58	14.4		SSE			6		10					Raining	George Carrick.
Armagh, Observatory			28.96	735.6	57.2	14.0		SSW	20	8.9			9					Squally	S. Call.
Bidston, (Liverpool Obs.)			29.21	741.9	61.0	16.1		SSW	15	6.7			7					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.86	733.0	29.25	742.9	61.9	16.6		W			3		8			0.02	0.5	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.94	760.5	29.97	761.2	84	28.9		NE			2		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.40	746.7	64.0	17.8		SSW			1		7					D. clouds	H. Todd.
Cardington			29.41	747.0	65.0	18.3		S			2		3					D. clouds	John McLaren.
Chatham, School M. E.	29.34	745.2	29.47	748.5	62.2	16.8		SW			2		7			Blank	Blank	D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	27.73	704.3	29.15	740.4	56.0	13.3		SW			4		9					Rain and fog	Alexander Watt.
Donaghadee	28.95	735.3	28.98	736.1	57	13.9		SSW			6		3					D. clouds	J. Mac Gowan.
Dover	29.47	748.5	29.49	749.0	62	16.7		SW			5		5					½ clouded	J. Costello.
Falmouth, Observatory	29.20	741.7	29.42	747.3	61.2	16.2		WSW			5		7					Squally	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.94	760.5	60.4	15.8		E			2		10					Overcast	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.75	755.6	29.98	761.5	76	24.4		Calm			0		4					Raining	
Galway, Queen's College			29.04	737.6	58	14.4		W			5		10					Showery	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.95	760.7	30.00	762.0				NW			4		4					D. clouds	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.81	757.2	30.02	762.5	59.9	15.5		SSE			7		9					Squally	D. G. Maclean.
Great Yarmouth	29.43	747.5	29.44	747.8	64	17.8		SSW			4		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.26	743.2	29.43	747.5	65.6	18.7		SSW			3		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.29	744.0	29.51	749.5	61	16.1		SW			5		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.44	747.8	62	16.7		SW			4		2ck			0.20	5.1	Thunder; l'ghtn'g	M. P. Moyle.
Holyhead	29.13	739.9	29.18	741.2	60	15.6		SSW			5		8					D. clouds	John Tilston.
Jersey	29.26	743.2	29.54	750.3	61.5	16.4		WSW			5		4			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory	29.39	746.5	29.42	747.3	63.5	17.5		SW	18	8.0			9ks					Raining	The Staff.
Kingstown	29.09	738.9	29.12	739.6	60	15.6		WSW			5		9					Overcast	George Mitchell.
Leicester, Museum			30.33	745.0	64.0	17.8		SW			2							Blue sky	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.05	763.3	30.12	765.0	76.6	24.8		SE			1		2s					Blue sky	Sergt. Beckett.
Nairn	28.91	734.3	29.00	736 6	63	17.2		SE			2		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	79.8	26.6		NE			3		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.11	739.4	29.30	744.2	67.3	19.6		SSW			6		4k		S	0.010	0.25	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.80	731.5	29.31	744.5	60.1	15.6		S			6–7		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.39	746.5	63	17.2		S			4		7					D. clouds	H.E. Bellamy.
Plymouth	29.34	745.2	29.41	747.0	63.5	17.5		SW			5		8					D. clouds	John Merrifield.
Roche's Point	29.20	741.7	29.24	742.7	59	15.0		W			5		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.10	739.1	29.26	743 2	59	15.0		SW			6		7					Squally	John C. Walker.
Sandwick Manse, (Orkneys.)			29.11	739.4	56.6	13.7		SE	32	14.3			10					Misty	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.13	765.3	62.4	16.9		N			2		10					Raining	Sergt. W. H. Lyne.
Sheffield	29.04	737.6	29.31	744.5	60.9	16.1		S			6		10			0	0	Overcast	W. F. Cooper.
Silloth, Rectory	29.09	738.9	29.12	739.6	65.3	18.5	67	SW			4		0			0.200	5.08	Blue sky	C. Edith Redford.
Stonyhurst, Observatory	28.83	732.3	29.24	742.7	58.1	14.5		S			4		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.22	742.2	29.43	747.5	60.8	16.0		S			2		6					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	29.01	736.8	29.07	738.4	58	14.4		SSE			5		9					Threatening	John Trotter.
Truro, Royal Institution			29.45	748.0	63	17.2		SW			6		6					D. clouds	W. Newcombe.
Valencia, Observatory	29.22	742.2	29.24	742.7	56.2	13 4		W	24	10.7			10					Showery	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.46	748.3	49.0	9.4	74	NW			2		6k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	30.00	762.0	30.19	766.8	69.9	21.1	47	ESE	18.0	8.0		0	1			0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.75	755.6	29.84	757.9	50.0	10.0	81	W	6	2.7			8			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Corrected. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced. Inches.	Barometer. Reduced. Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind. From—	Miles per hour.	Meters per second.	Force.	Clouds. Up'er.	Clouds. Low'r.	Clouds. Upper. From—	Clouds. Lower. From—	Sea or swell. Height scale 0–9.	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 40° 0′, W. 67° 50′			30.15	765.8	68	20.0		WNW			5		4			4	Confused.	D. clouds	Capt. Alex. Wilson.
Barque Commewyne																			Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 19° 45′, W. 60° 45′			30.00	762.0	84	28.9					2		6				Cross	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by those observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.24	666.6	29.94	760.6	67.1	19.5	95	Calm			0		10n			Inap.	Inap.		Federico Maison

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.70	754.3	29.74	755.5	61.5	16.4	80	SW			2		0						
Faröe	29.58	751.3	29.60	751.8	64.8	18.2	75	SSE			4		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.18	741.2	29.22	742.1	49.8	9.9	99	SE			4		10					Foggy	
Vestervig	29.43	747.5	29.60	751.8	64.0	17.8	80	SE			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.10	739.2	29.65	753.2	62.6	17	81	SW			1		5		E	0.071	1.8	Cloudy	Collignon, Director.
Amiens, Normal School	29.50	749.2	29.60	751.9	64.4	18.0	73	S			3		5		NE	0.04	1.	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.09	754.1	29.77	756.1	63.3	17 4	94	S			2		10		S	1.000	25.4	Raining	M. Giraud, Director.
Bar-sur-Seine	29.15	740.4	29.70	754.3	57.2	14.0	93	S			1		10		W	0.724	18.4	Raining	C. Saillard.
Beaumette Obsy (Angers)																			Albert Cheux.
Beauvais, Normal School	29.35	745.4	29.63	752.5	63.5	17.5	71	SSW			1		10		SSW	0.108	2.75	Covered	Frere Eugene Marie, Director.
Besançon	28.96	735.5	29.847	737.9?	58.5	14.7	93	S			2		10		W	0.252	6.4	Covered	Normal School.
Bourg-en-Bresse, N. School	28.98	736.1	29.90	759.5	55.6	13.1	95	NE			1		10n		SW	1.06	27.	Raining	M. Marlot, Director.
Bourges, Normal School	29.14	740.2	29.69	754.0	59.9	15.5	70	SW			1		10ks		SW	0.35	9.	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.31	744.4	29.55	750.6	66.2	19.0	67	WSW			4		6		WSW	0.049	1.25	Squally	The Staff.
Carcassonne, Normal School	29.38	746.3	29.80	756.8	60.4	15.8	78	W			2		5	NW	W	0.51	13.	Cloudy	Septembre, Director.
Caen	29.47	748.6	29.60	749.4	67.3	19.6	72	SW			6		2		SSW	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.02	737.2	29.57	751.1	60.4	15.8	93	S			4		10			0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. School	29.35	745.4	29.66	753.3	58.6	14.8	89	S			3		10kn		S	0.520	13.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.42	721.9	29.76	755.9	56.5	13.6	89	ESE			1		10		SW	0.520	13.2	Covered	Alluard, Director.
Commercy, Normal School	28.89	733.7	29.75	755.7	57.9	14.4	93	S			1		10k		S	0.106	2.7	Raining	Dr. Coulet, Director.
Commune de Grèasque*	28.72	729.6	29.87	758.6	60.6	15.9	91	SE			2		10	SE	NE	0.724	18.4	Covered	M. Kina.
Grenoble, Normal School	28.97	735.7	29.73	755.1	53.6	12	100	NNW			6		10n			0.39	10.	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.33	744.9	29.63	752.5	63.5	17.5	68	WSW			3		2	S	W	0	0	Slightly cl'dy	Pourrier, Director.
Lons-Le-Saulnier, N. School	28.90	734.1	29.81	757.1	56.3	13.5	95	W			1		10		SW	1.10	28.	Raining	Baudry, Director.
Lorient, Naval Observatory	29.53	750.0	29.63	752.6	63.7	17.6	71	WSW			6			W	SW	0.079	2.0		T. Carré, Director.
Mâcon, Normal School	29.80	756.8	29.83	757.7	56.1	13.4	78	WSW			3		10			2.99	76.	Covered	M. Galzin, Director
Mirecourt, Normal School	28.71	729.3	29.74	755.3	58.8	14.9	91	SSW			1		10n		SSW	0.04	1.	Raining	M. Barbier, Director.
Nismes, Normal School	29.56	750.8	29.76	755.9	59.7	15.4	52	SE			1		5		S	1.30	33.	Cloudy	Boyer, Director.
Privas, Normal School	28.76	730.6	29.82	757.4	55.4	13.0	93	S			1				NNE	S	0.24	6.		M. Cantier.
Puy de Dome (Summit)	24.92	633.0			41.0	5.0	100	W			2		10			5.83	14.8	Rain and fog	Alluard, Director.
Rochefort, Naval Obs'y	29.67	753.6	29.70	754.4	65.3	18.5	83	W			2		8	W	W	0.04	1.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.50	749.4	29.59	751.6	65.3	18.5	68	S			1		5		S	0	0	Cloudy	F. Lucard, Director.
Saint Malo (Port)			29.55	750.5	65.5	18.6	55	SW			3		5		SSW	0.047	1.20	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.48	748.7	29.64	752.9	60.8	16.0	82	S			2		10		SSW	0.319	8.1	Raining	E. Renou.
Tarbes, Normal School	28.83	732.3	29.90	759.5	57.2	14	67	W			2		10			0.55	14.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.08	738.7	29.78	756.3	65.3	18.5	71	SE			1		10		SW	0.492	12.5	Covered	M. Gausserand, Director
SUB-STATIONS.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										3.11	79.		L'Abbé Marchési.
Lyons, Observatory			29.65	753.1									10			1.933	49.1		
Marseilles, Observatory			29.79	756.6	64.4	18.0	84	SE			2		10			1.028	26.10	Thunder-storm	The Staff.
Mont-Louis	24.63	625.7	29.56	750.7	48.2	9.0	56	NNW			5		4		SE	0.295	7.5		M. Cave.
Nice			29.90	759.4	69.8	21.0	84	E			2		10					Raining	Dr. A. Niepce.
Paris, Montsouris Obsy	29.36	745.7	29.63	752.7	61.2	16.2	79	SSW			4		10		SSW	0.260	6.6		Marié Davy, Director
Perpignan			29.78	756.4	64.8	18.2	52	NW	33.6	15.00			8		NW	0.315	8.0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.35	567.7			29.7	— 1.3		SW			3		10			0.717	18.2	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.16	740.6	29.88	758.9	58.8	14.9	81	SW			2		9			0.128	3.25		The Staff.
Tours	29.47	748.5	29.67	753.5	57.9	14.4	89	W			1		10		W	0.008	0.2		C. Marquet.
Versailles			29.64	752.8	62.2	16.8	66	SW			2		10			0.168	4.26	Covered	Dr. A. Berigny.
Zi-Ka-Wei, (near Shanghai)	30.13	765.4	30.16	766.0	69.8	21.0	91	NE	5.1	2.3			10			0.004	0.1	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 383 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.90	734.0	29.73	755.2	66.2	19.0	65	Calm			0		4			0	0	Foggy	Prof. Dr. Hoh.
Berlin	29.64	752.9	29.81	757.2	68.2	20.1	60	S			1		3			0	0		Prof. Arndt.
Breslau	29.38	746.3	29.91	759.7	68.0	20.0	51	SSE			3		1			0	0		Royal University Obs'y
Carlsruhe	29.28	743.6	29.69	754.1	64.4	18.0	78	W			1		10			0.213	5.4		Albert Senz.
Cassel	29.17	740.9	29.77	756.2	66.6	19.2	70	SE			1		5	SW		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.43	747.4	29.59	751.6	66.0	18.9	73	S			4		8			0.20	5.		Director Lose.
Emden	29.61	752.0	29.64	752.9	65.7	18.7	80	SE			3		0			0	0		Prof. Prestel.
Frankfort on the Main	29.36	745.8	29.71	754.7	68.2	20.1		SSE			2		5			0	0		Physical Society.
Friedrichshafen	28.34	719.7	29.75	755.6	57.9	14.4	85	WNW			2		7	WSW		0.539	13.7		M. Wilhelm.
Hamburg	29.63	752.7	29.70	754.4	68.7	20.4	69	SE			3		7ks			0	0	Fine	Captain F. Hegemann.
Kiel	29.68	753.8	29.69	754.2	63 1	17.3	83	S			1		8			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.83	757.6	29.91	759.7	63.5	17.5	62	S			4		0			0	0		Prof. E Luther.
Köslin			29.83	757.6	57.2	14.0													H. Müller.
Leipsic, Observatory	29.37	746.1	29.78	756.4	72.0	22.2	53	S			2		7			0	0		Prof. Bruhns.
Memel, Naval School	29.89	759.1	29.93	760.3	55.9	13.3	74	S			3		1cs						Reinbrecht and Skalweit.
Neufahrwasser	29.89	759.2	29.91	759.6	63.3	17.4	67	S			3		0			6	0		A. Lothes.
Posen	29.64	752.8	29.93	760.1	64.9	18.3	55	SE			1		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.20	741.6	29.73	755.2	63.0	17.2	81	NE			2		10	SW				Raining	Astronomical Observatory.
Stuttgart	28.77	730.7	29.67	753.7	66.2	19.0	67	SE			1		10			0.031	0.8		Prof. Schoder.
Treves, (Trier)	29.15	740.4	29.67	753.5	60.8	16.0	86	SW			2		10			0.053	1.35		Prof. Flesch.
Weissenburg, (Bavaria)	28.27	718.1	29.74	755.4	66.2	19.0	65	S	7.6	3.4			9ck			0	0		Dr. Von Bebber.
Wustrow, Naval School	29.73	755.2	29.76	755.8	66.7	19.3	69	SSE			2		5ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.80	757.0	30.19	766.7	70.5	21.4		NE			2.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.41	747.1	29.88	759.0	89.7	32.1	51	W								0	0	Blue sky	
Bombay	29.85	758.1	29.88	759.1	84.4	29.1	81	WNW	9	4.0			2	NNW		0	0	D. clouds	
Poona	27.90	708.8	29.90	759.6	80.3	26.8	63	WNW					6	WNW		0	0	D. clouds	
Lahore	29.05	737.8	29.78	756.5	83.0	28.3	40	Calm	3.9	1.7						0	0	Misty	
Belgaum	27.39	695.7	29.95	760.8	71.8	22.1	87	W	3	1.3			9	W		0.28	7.1	D. clouds	
Roorkee	28.82	732.0	29.71	754.6	82.8	28.2	40	Calm	3	1.3			4			0	0		
Agra	29.21	742.0	29.77	756.0	91.7	33.2	37	W								0	0		
Nagpur	28.77	730.8	29.81	757.1	83.9	28.8	63	Calm	4.9	2.2			4	E	NE	0	0	D. clouds	
Lucknow	29.30	744.2	29.67	753.5	88.4	31.3	52	Calm	1.2	0.5						0	0	Blue sky	
Allahabad	29.41	747.0	29.72	754.8	85.2	29.6	61	Calm	3.2	1.4			0			0	0	Blue sky	
Patna	29.51	749.6	29.69	754.2	84.6	29.2	75	Calm	0.4	0.2			0			0	0	Blue sky	
Hazaribagh	27.75	704.9	29.75	755.6	81.8	27.7	55	W	5.8	2.6			0			0	0	Blue sky	
Cuttack	29.66	753.2	29.74	755.3	87.1	30.6	76	WSW	1.2	0.5						0	0	Blue sky	
Calcutta (Alipore)	29.72	754.9	29.74	755.4	85.2	29.6	90	S	2	0.9			2			0	0	D. clouds	
Goalpara	29.35	745.4	29.74	755.3	78.9	26.1	89	SSW	2.1	0.9			6			0	0	D. clouds	
Chittagong	29.70	754.4	29.79	756.7	82.9	28.3	87	ESE	2.7	1.2			8			0	0	Misty	
Sibsagar	29.45	748.0	29.78	756.5	77.9	25.5	77	NE	4.3	1.9			10	W	W	0.27	6.9	D. clouds	
Jubbulpore	28.46	722.9	29.81	757.1	86.7	30.4	62	N	3.5	1.6								Showery	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.69	754.2	30.10	764.5	61.3	16.3	83	NE	1.8	0.8	.....	.....	9	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.93	760.3	30.04	763.1	68.7	20.4	68	E	12.5	5.6	.....	.....	6	ESE	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.86	758.5	30.05	763.3	68.2	20.1	60	NE	2.5	1.1	.....	.....	5	W	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.69	728.8	30.00	762.0	61.2	16.2	79	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.41	747.1	29.92	760.0	62.1	16.7	89	NE	.....	.....	6	.....	10	SE	.....	0.020	25.9	.....	Prof. Schiaparelli.
Moncalieri	29.02	737.0	29.91	759.8	58.3	14.6	99	NNW	3.1	1.4	.....	.....	10	SE	.....	0.295	7.5	.....	Prof. P. F. Denza.
Mondovi	28.01	711.5	29.91	759.6	55.2	12.9	98	W	.....	.....	4	.....	10	.....	.....	0.610	15.5	.....	Prof. D. C. Bruno.
Porto Maurizio	29.66	753.3	29.88	758.9	67.3	19.6	89	NW	.....	.....	2	.....	10	ESE	.....	0.394	10.0	.....	Prof. L. Vassallo.
Genoa	29.74	755.5	29.91	759.8	68.2	20.1	83	SE	16.8	7.5	.....	.....	10	SE	.....	0.610	15.5	.....	Prof. G. M. Garibaldi.
Parma	29.68	753.8	29.99	761.7	65.8	18.8	79	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.78	756 3	30.03	762.7	74.8	23.8	53	SE	.....	.....	2	.....	10	SSW	.....	0	0	.....	Cav. F Meucci
Leghorn	29.87	758.6	29.95	760.7	71.6	22.0	74	SE	8.1	3.6	.....	.....	10	S	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.53	724.7	30.07	763.8	63.7	17.6	64	SW	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.90	759.4	30.07	763.8	73.0	22.8	61	S	13.0	5.8	.....	.....	10	.....	.....	0	0	.....	Prof. P G. S. Ferrari.
Naples, O. U	29.95	760.6	30.14	765.6	75.9	24.4	55	SW	.....	.....	1	.....	6	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.90	759.4	30.15	765.8	73.6	23.1	44	WSW	1.8	0.8	.....	.....	5	SW	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.74	755.3	29.93	760.1	77.2	25.1	78	E	.....	.....	4	.....	10	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.26	743.2	30.13	765.4	74.5	23.6	70	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.84	757.9	30.09	764.2	75.5	24.4	43	ENE	1.8	0.8	.....	.....	3	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.10	764.4	30.17	766.3	75.0	23.9	60	ESE	8.7	3.9	.....	.....	3	WSW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	30.02	762.5	30.22	767.6	65.2	18.4	82	N	3.8	1 7	.....	.....	10n	.....	.....	0.225	5.72	Rainy	I. Arai, Director.
Tokei (Yeddo) Observatory	30.36	771.1	30.43	772.9	49.2	9.6	90	ENE	4.0	1.8	.....	1cs	0	.....	.....	0	0	Fair	Prof. F. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.3	17.4	91	N	.....	.....	3	9ck	0	.....	.....	0.528	13.4	Very cloudy	P. Ceballos.
Guadalajara	25.04	636.1	29.99	761.6	59.4	15.2	75	NE	.....	.....	3	.....	9	.....	SE	0.142	3.6	Very cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.40	619.8	29.98	760.4	63.0	17.2	81	SW	.....	.....	1	2c	3s	SW	Calm	Inap.	Inap.	⅛ cloudy	Prof. M. Leal.
Mexico	23.09	586.4	30.05	763.3	56.3	13.5	90	NW	0.2	0.1	.....	0	10k	.....	E	0.06	1.4	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	59.9	15.5	89	Calm	.....	.....	0	0	8ks	.....	S	0.047	1.2	Misty	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpan	29.84	757.9	29.85	758.2	75.9	24.4	92	E	.....	.....	1	3	1	W	N	1.800	45.7	⅛ cloudy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.19	766.7	54.0	12.2	68	E	.....	.....	.....	7	3	W	E	0	0	Misty	G. Barreeta, M. D.
Vera-Cruz	29.94	760.4	29.97	761.1	78.8	26.0	84	WNW	2.4	1.1	.....	.....	10sk	.....	.....	0	0	Very cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.2	54.0	12.2	88	NNE	2.2	1.0	.....	3	2	Calm	Calm	0.256	6.50	Light mist	Prof. P. Spina.
Durango	24.21	615.0	30.03	762.8	63.0	17.2	88	E	.....	.....	1	0	3s	.....	.....	0.039	1.0	Clear	M. V. de Leon, C. E.
Colima	28.32	719.2	29.94	760.5	77.9	25.5	83	E	0.8	0.4	.....	4	5	E	E	0.197	5.0	⅛ cloudy	R.Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.55	750.6	29.55	750.6	63.0	17.2	.....	S	.....	.....	4	.....	.....	.....	.....	0.043	1.1	.....	
Groningen	29.51	749.6	29.57	751.0	63.5	17.5	.....	S	.....	.....	1	.....	.....	.....	.....	0.004	0.1	.....	
Helder	29.52	749.9	29.52	749.9	63.1	17.3	.....	SSE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.54	750.3	29.54	750.3	63.3	17.4	90	S	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.52	749.8	29.57	751.0	63.9	17.7	84	S	.....	.....	3	.....	8	.....	.....	0.043	1.1	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.50	749.3	29.56	750.7	61.5	16.4	71	S	15.2	6.8	.....	.....	1	.....	.....	0	0	.....	
Brönö	29.50	749.4	29.54	750.4	51.8	11.0	92	SW	27	12	.....	.....	10	.....	.....	0.236	6.0	Light rain	
Christiania	29.55	750.6	29.70	754.3	52.2	11.2	97	ENE	2	1	.....	.....	10	.....	.....	0.220	5.6	Raining	
Tromsö	29.54	750.3	29.58	751.4	37.0	2.8	86	SW	7	3	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.82	757.4	30.01	762.2	69 8	21.0	87	W	10.5	4.7	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.05	737.8	30.07	763.7	64.4	18.0	55	SW	2.5	1.1	.....	.....	9	WNW	.....	0.335	8.5	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	762.1	30.09	764.3	76.3	24.6	64	SW	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.71	754.7	30.07	763.8	64.9	18.3	68	SW	12.5	5.6	.....	.....	7	W	.....	0.512	13.0	.....	The Staff.
Ponta Delgada, (Azores)	30.01	762.2	30.08	764.0	70.2	21.2	89	SW	13.0	5.8	.....	.....	10	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.99	761.7	81.3	27.4	.....	NW	.....	.....	5	.....	3	.....	NW	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	29.96	761.0	83.3	28.5	.....	NE	.....	.....	3	.....	7	.....	NE	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 31′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.68	753.8	29.78	756.5	72.5	22.5	36	W	4.6	2.06	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.80	756.8	29.85	758.2	67.5	19.7	61	W	1.9	0.84	.....	2	6	SW	.....	0.031	0.8	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.98	685.4	.....	.....	56.1	13.4	84	SW	13.7	6.13	.....	.....	7	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.77	705.4	29.98	761.4	61.9	16.6	67	SW	26.8	12.00	.....	2	9	NE	.....	0.354	9.0	.....	The Staff.
Murcia, Met. Obs'y	29.77	756.1	29.88	759.0	68.9	20.5	62	NE	1.9	0.88	.....	3	3	E	.....	0.004	0.10	Misty	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.99	736.3	29.87	758.7	61.5	16.4	54	SW	9.9	4.44	.....	3	4	.....	.....	0.685	17.4	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.97	761.2	30.03	762.8	77.8	25.4	88	Calm	0	0	.....	4cs;cs	0	E	.....	0.713	18.1	Fair	Benito Vines, S. J
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.96	761.0	30.06	763.5	67.5	19.6	67	NNW	8.6	3.9	.....	4	5	NW	N	0.245	6.2	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.86	758.4	29.95	760.7	83.5	28.6	88	NE	0	0	.....	5k	6kn	NE	NE	1.230	31.25	Cloudy	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Velocity.		Force.	Clouds. Amount.		Direction.		Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.		
Haparanda	29.68	753.9	29.72	754.9	36.0	2.2	.....	W	.....	.....	2	.....	10	.....	.....	0.12	3.	Raining.....	
Umea	29.65	753.1	29.70	754.4	48.2	9.0	95	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.63	752.6	29.68	753.9	56.1	13.4	73	SSW	.....	.....	2	.....	1	.....	.....	0.016	0.4	Raining	
Stockholm	25.64	752.8	29.82	757.3	57.4	14.1	85	Calm	.....	.....	0	.....	8	.....	.....	Inap	Inap.	.....	
Wisby	29.75	755.7	29.81	757.2	58.6	14.8	83	SSE	.....	.....	4	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.69	754.1	29.76	756.0	50.2	10.1	95	SSW	.....	.....	.....	.....	10	.....	.....	0.043	0.11	Foggy	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.34	719.9	29.77	756.2	53.2	11.8	98	SW	.....	.....	1	.....	10	.....	.....	0.114	2.9	Raining.....	The Observatory.
Zurich	28.15	715.0	29.77	756.2	59.0	15.0	78	SE	.....	.....	1	.....	8	.....	.....	0.299	7.6	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.4 mm.; Thermometer, —2.6 cent.; Relative Humidity, +29 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.19	766.7	61.2	16.2	81	NNW	11	5.0	.....	.....	10	.....	NNW	0	0	.....	The Observatory.
Valona	.....	.....	30.24	768.2	72.7	22.6	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.77	756.1	29.89	759.1	76.5	24.7	50	NE	.....	.....	1	.....	1s	.....	SW	0.11	2.8	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.72	754.9	30.03	762.7	51	10.6	.....	SW	1	0.4	.....	.....	10s	.....	SW	0.06	1.5	Cloudy.....	W. R. Bigg.
*Chatham, N B	30.13	765.3	30.20	767.1	45	7.2	86	SW	2	0.9	.....	2cs	8ks	SW	SW	0	0	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island.	30.17	766.3	30.21	767.3	55	12.8	75	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	30.00	762.0	51.4	10.8	85	SW	.....	.....	1	.....	9s	.....	.....	0	0	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	29.98	761.5	30.14	765.5	43	6.1	97	W	.....	.....	1	.....	.....	.....	.....	0	0	Overcast.....	H. A. Johnson.
Esquimault, B. C	29.94	760.6	29.99	761.7	44.3	6.8	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.28	7.1	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	30.01	762.2	30.03	762.7	48	8.9	83	Calm	0	0	.....	8k	2n	S	S	Inap	Inap	Threatening	J. McWilliams.
Fredericton, N. B	30.14	765.5	30.20	767.1	47.0	8.3	79	SE	8	3.6	.....	.....	10s	.....	.....	Inap.	Inap.	Overcast.....	Prof. Harrison.
*Fort Garry Manitoba	29.07	738.4	29.93	760.2	30	— 1.1	96	Calm	0	0	.....	0	5s	.....	SW	0	0	Fair.....	James Stewart.
Granton, Ontario	29.90	736.0	30.12	765.0	42	5.6	100	S	.....	.....	1	0	0	.....	.....	0	0	Foggy	James Grant.
*Halifax, N. S	30.06	763.5	30.19	766.8	50	10.0	93	S	1	0.4	.....	.....	10n	.....	S	0	0	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.17	766.3	46.9	8.3	86	SW	.....	.....	2	2c	0	.....	.....	0	0.	Hazy.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.22	767.6	30.24	768.1	46	7.8	77	NW	.....	.....	1	0	0	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.78	755.1	30.06	763.5	52	11.1	84	W	15	6.7	.....	10cs	0	Calm	.....	0.02	0.5	Cloudy.....	S. Woods, M. A.
Little Glace Bay, N. S	30.23	767.8	30.27	768.8	49.7	9 8	76	W	6	2.7	.....	8ok	0	W	.....	0	0	Cloudy.....	C. H. Rigby.
*Montreal, Quebec	29.82	757.4	30.01	762.2	51	10.6	80	S	12	5.4	.....	8k	2ks	W	.....	0	0	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.35	745.5	30.06	763.5	40	4.4	96	W	3	1.3	.....	2k	5ks	W	W	Inap.	Inap.	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.38	746.2	30.16	766.1	45.7	7.6	92	Calm	.....	.....	0	0	5ks	.....	.....	0	0	Fine.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.16	766.1	46	7.8	94	Calm	0	0	.....	10ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.19	766.8	30.24	768.1	54.7	12.6	.....	SW	6	2.7	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.50	749.3	30.15	765.8	48	6.1	96	W	1	0.4	.....	5k	Fog	W	.....	0	0	Foggy	M. Payne.
*Quebec, Quebec	29.71	754.6	30.03	762.7	50	10.0	79	Calm	.....	.....	0	.....	10n	.....	N	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.57	751.1	30.03	762.7	45	7.2	80	NW	3	1.3	.....	5c	0	NW	.....	0	0	Fair.....	W. H. McIntyre.
St. Andrews, N. B	30.11	764.8	30.16	766.1	50	10.0	85	SW	2	0.9	.....	5k	5ks	SW	.....	0	0	Cloudy.....	Dr. Gove.
St. John, N. B	30.03	762.7	30.20	767.1	50	10.0	82	S	6	2.7	.....	7cs	0	.....	.....	0.03	0.8	Fair.....	G. Murdock, C. E.
*Saugeen, Ontario	29.34	745.2	30.06	763.5	47	8.3	84	S	12	5.4	.....	2cs	Fog	.....	.....	0.14	3.6	Fair.....	K. Stewart.
Stayner, Ontario	29.30	744.2	30.07	763.8	55	12.8	50	SE	3	1.3	.....	8c	0	NW	.....	0	0	Fair.....	R. J. Cole.
Stratford, Ontario	28.84	732.5	30.15	765.8	40.4	4.7	98	W	2.5	1.1	.....	1c	2s	.....	.....	0	0	Fair.....	C. J. MacGregor, M. A
*Sydney, C. B	30.26	768.6	30.29	769.4	48	8.9	92	SW	3	1.3	.....	.....	10s	.....	.....	0	0	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.76	755.9	30.15	765.8	47	8.3	93	W	1	0.4	.....	2ck	2ks	W	W	0	0.	Fair.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	85	NW	.....	.....	.....	1k	2s	.....	.....	0.04	1.0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.91	759.7	30.14	765.5	51	10.6	89	S	5	2.2			10s		S	0.17	4.3	Cloudy	
Alpena, Michigan	29.35	745.5	30.00	762.0	45	7.2	84	W	3	1.3			10s		SW	0	0	Cloudy	
Atlanta, Georgia	29.06	738.1	30.20	767.1	62	16.7	100	E	8	3.6			Fog		E	0.01	0.3	Foggy	
Atlantic City, New Jersey	30.21	767.3	30.23	767.8	54	12.2	93	NW	5	2.2			10s		Calm	0.08	2.0	Cloudy	
Augusta, Georgia	30.08	764.0	30.27	768.8	66	18.9	89	Calm	0	0			Fog		NE	0	0	Foggy	
Baltimore, Maryland	30.20	767.1	30.25	768.3	52	11.1	86	W	4	1.8			10s;fg		Calm	0.18	4.6	Foggy	
Barnegat, New Jersey	30.21	767.3	30.23	767.8	53	11.7	93	NW	7	3.1			10s		NW	0.22	5.6	Cloudy	
Bismarck, Dakota	28.10	713.7	29.95	760.7	35	1.7	90	N	6	2.7			10s		Calm	0	0	Cloudy	
Boerne, Texas	28.46	722.9			71	21.7	95	SE	1	0.4			10s		SE	0	0	Cloudy	
Boise City, Idaho	27.16	689.8	30.12	765.0	47	8.3	81	NE	1	0.4		5k	0	SW		0	0	Fair	
Boston, Massachusetts	30.01	762.2	30.17	766.3	54	12.2	93	SW	5	2.2			10n;fg		SW;Calm	0.01	0.3	Light rain	
Brackettville, Texas	28.84	732.5	29.83	757.7	74	23 3	82	SE	4	1.8			10s		S	0	0	Cloudy	
Breckenridge, Minnesota	28.84	732.5	29.85	758.2	39	3.9	91	N	4	1.8			10s		Calm	0	0	Cloudy	
Brownsville, Texas	29.92	760.0	29.98	761.5	75	23.9	90	Calm	0	0			10ks		S	0.18	4.6	Cloudy	
Buffalo, New York	29.43	747.5	30.13	765.3	51	10.6	86	W	4	1.8		2ck	Sm'e	W	Calm	0	0	Fair	
Burkes, Arizona					65	18.3	Inap.	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.86	758.4	30.12	765.0	52	11.1	79	S	8	3.6		2ck	Haze	Calm	Calm	0.03	0.8	Fair	
Cairo, Illinois	29.64	752.8	30.02	762.5	62	16.7	83	E	1	0.4		1k	0	E		0	0	Clear	
Camp Apache, Arizona					45	7.2	45	NE			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.10	637.5	29.90	759.4	63	17.2	28	E			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.24	768.1	51	10.6	46	Calm			0	0	0			0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	33	0.6	69	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.25	768.3	30.26	768.6	69	20.6	90	N	10	4.5		5k	0	SW		0.01	0.3	Fair	
Cape Henry, Virginia	30.21	767.3	30.24	768.1	61	16.1	94	W	6	2.7			10s		Calm	Inap.	Inap.	Threatening	
Cape Lookout, N. Carolina	30.26	768.6	30.28	769.1	74	23.3	86	SW	4	1.8		0	Haze		SW	0.04	1.0	Hazy	
Cape May, New Jersey	30.21	767.3	30.24	768.1	59	15.0	82	NW	6	2.7			10s		NW	0.05	1.3	Cloudy	
Castroville, Texas	29.20	741.7	29.88	758.9	74	23.3	86	Calm	0	0			10s		Calm	0	0	Cloudy	
Charleston, South Carolina	30.23	767.8	30.20	769.4	72	22.2	90	NE	5	2.2		0	0			0	0	Clear	
Cheyenne, Wyoming	23.91	607.3	29.85	758.2	40	4.4	82	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.28	743.7	29.96	761.0	53	11.7	61	SW	10	4.5		5cs	0	Calm		0	0	Fair	
Cincinnati Ohio	29.52	749.8	30.18	766.6	55	12.8	80	SE	1	0.4			Fog		Calm	0	0	Dense fog	
Cleveland, Ohio	29.44	747.8	30.17	766.3	49	9.4	78	SE	6	2.7		0	Fog		Calm	0	0	Clear	
Coleman City, Texas	28.21	716.5	29.84	757.9	64	17.8	89	S	6	2.7		5c	0	S		0	0	Fair	
Columbus, Ohio	29.32	744.7	30.18	766.6	46	7.8	85	Calm	0	0		2c	Fog	Calm	Calm	0	0	Foggy	
Concho, Texas	28.08	713.2	29.70	754.4	67	19.4	59	S	4	1.8		5c	0	S		0	0	Fair	
Corsicana, Texas	29.56	750.8	30.01	762.2	68	20.0	90	SE	2	0.9		2ck	2s	Calm	SE	0	0	Fair	
Davenport, Iowa	29.27	743 4	29.90	759.4	58	14.4	64	S	13	5.8		7k	0	SW		0	0	Fair	
Decatur, Texas	28.53	732 3	29.96	761.0	67	19.4	89	S	7	3.1		0	0			0	0	Clear	
Denison, Texas	29.20	741 7	29.97	761.2	67	19.4	95	S	8	3.6		2cs	0	Calm		0	0	Fair	
Denver, Colorado	24.68	626.9	29.90	759.4	51	10.6	16	SW	8	3.6		0	2s	Calm	Calm	0	0	Clear	
Des Moines, Iowa	28.87	733.3	29.73	755.1	54	12.2	80	SW	3	1.3		2c	Haze	Calm	Calm	0	0	Fair	
Detroit, Michigan	29.43	747.5	30.10	764.5	49	9.4	85	SW	3	1.3		2k	0	W		0	0	Fair	
Dodge City, Kansas	27.18	690.4	29.38	746.2	58	14.4	82	SW	12	5.4		0	0			0	0	Clear	
Dubuque, Iowa	29.15	740.4	29.84	757.9	54	12.2	74	S	9	4.0		0	Fog		S	0	0	Foggy	
Duluth, Minnesota	29.14	740.1	29.82	757.4	46	7.8	84	NW	3	1.3			10s		NW	0.20	5.1	Cloudy	
Eagle Pass, Texas	29.24	742.7	29.96	761.0	71	21.7	90	E	4	1.8			10ks		Calm	0	0	Cloudy	
Eastport, Maine	30.10	764.5	30.17	766.3	52	11.1	79	S	10	4.5		10ck	Haze	W	Calm	0	0	Cloudy	
Edinburg, Texas					74	23.3	86	Calm			0		10s		S	0	0	Cloudy	
El Paso, Texas					60	15.6	44	Calm	0	0		0	0			0	0	Clear	
Erie, Pennsylvania	29.43	747.5	30.14	765.5	52	11.1	93	S	4	1.8		2ck	Sm'e	W		0	0	Fair	
Escanaba, Michigan	29.20	741.7	29.85	758.2	52	11.1	86	SE	18	8.0			10n		SE	0.07	1.8	Light rain	
Florence, Arizona	28.37	720.6	29.97	761.2	65	18.3	35	Calm			0	0	0			0	0	Clear	
Fort Craig, New Mexico	25.61	647.9	29.58	751.3	47	8.3	69	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	59	15.0	76	W	5	2.2		2k	0	SW		0.41	10.4	Fair	
Fort Gibson, Indian Ter	29.42	747.3	29.94	760.5	66	18.9	79	S	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.70	729.0	29.94	760.5	64	17.8	83	Calm	0	0		2c	2s	Calm	Calm	0	0	Fair	
Fort McKavett, Texas	27.78	705.6	29.63	752.6	70	21.1	57	S	1	0.4		0	5s		S	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.75	730.2	29.83	757.7	62	16.7	100	SE	4	1.8		0	Fog			0	0	Dense fog	
Fredericksburg, Texas	28.26	717.8	29.76	755.9	72	22.2	85	Calm	0	0			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.97	761.2	30.01	762.2	78	25.6	73	E	7	3.1		2c	5ks	Calm	E	0	0	Cloudy	
Graham, Texas	28.89	733.8	29.90	759.4	71	21.7	66	S	4	1.8		0	6ks		SW	0	0	Fair	
Grand Haven, Michigan	29.31	745.2	29.98	761.5	52	11.1	66	S	7	3.1		0	5s			0	0	F ir	
Indianapolis, Indiana	29.32	744.7	30.11	764.8	48	8.9	78	Calm	0	0		0	Sm'e			0	0	Clear	
Indianola, Texas	29.99	761.7	30.01	762.2	78	25.6	78	SE	7	3.1		3ck;k	0	W;SE		0	0	Fair	
Jacksboro, Texas	28.82	732.0	29.92	760.0	67	19.4	79	S	3	1.3		2c	0	Calm		0	0	Clear	
Jacksonville, Florida	30.16	766.1	30.18	766.6	74	23.3	76	E	2	0.9		0	0			0	0	Clear	
Keokuk, Iowa	29.29	744.0	29.89	759.2	57	13.9	81	S	7	3.1			8n		SW	0.25	6.3	Light rain	
Key West, Florida	30.01	762.2	30.05	763.3	80	26.7	87	E	4	1.8			10s		E	0	0	Cloudy	
Kittyhawk, North Carolina	30.25	768.3	30.27	768.8	65	18.3	94	N	6	2.7		5ck	2s	W	N	0	0	Fair	
Knoxville, Tennessee	29.22	742.2	30.22	767.6	57	13.9	100	Calm	0	0			Fog		Calm	0.10	2.5	Dense fog	
La Crosse, Wisconsin	29.04	737.6	29.75	755.6	59	15.0	58	S	6	2.7		10ck	0	W		0	0	Cloudy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	50	10.0	86	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.53	750.0	29.86	758.4	77	25.0	82	SE	3	1.3		10cs	0	Calm		0	0	Cloudy	
Lead City, Dakota	24.69	627.1	29.96	761.0	37	2.8	81	W	3	1.3			10s		W	0	0	Cloudy	
Leavenworth, Kansas	28.94	735.1	29.75	755.6	64	17.8	78	S	8	3.6		10c;ck	0	N;SW		0.06	1.5	Cloudy	
Los Angeles, California	29.56	750.8	29.89	759.2	58	14.4	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.56	750.8	30.12	765.0	56	13.3	81	SW	1	0.4			Fog		Calm	0	0	Foggy	
Lynchburg, Virginia	29.59	751.6	30.28	769.1	54	12.2	86	Calm	0	0		0	8ks		Calm	0.85	21.6	Cloudy	
Madison, Wisconsin	28.88	733.5	29.84	757.9	54	12.2	61	SW	14	6.3		2c	5s	W	W	0	0	Fair	
Marquette, Michigan	29.15	740.4	29.84	757.9	48	8.9	78	SE	4	1.8			10n		Calm	Inap	Inap.	Light rain	
Mason, Texas	28.37	720.6	30.07	763.8	68	20.0	90	SE	1	0.4			10s		SE	0	0	Cloudy	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.17	740.9	29.89	759.2	54	12.2	61	S	10	4.5			10ks		SW	0	0	Cloudy	
Mobile, Alabama	30.09	764 3	30.13	765.3	73	22.8	90	SE	6	2.7		2k	8s	S	S	0	0	Cloudy	
Montgomery, Alabama	29.94	760.5	30.18	766.6	69	20.6	75	E	5	2 2		5c	5s	W	Calm	0	0	Cloudy	
Morgantown, West Virginia	29.14	740.1	30.20	767.1	53	11.7	100	W	1	0.4			10s;fg		Calm	0.05	1.3	Cloudy	
Mt. Washington, N. H.	23.80	604.5	30.16	766.1	30	— 1.1	100	NW	39	17.4			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.61	752.1	30.14	765.5	64	17.8	89	SE	2	0.9		0	2s		SE	0	0	Fair	
New Haven, Connecticut	30.08	764.0	30.20	767.1	58	14.4	82	W	8	3.6		5c	0	Calm		0.07	1.8	Fair	
New London, Connecticut	30.15	765.8	30.20	767.1	56	13.3	94	W	6	2.7		6	8s		SW	0.09	2.3	Fair	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	76	24 4	86	N	8	3.6			10ks		Calm	0	0	Cloudy	
Newport, Rhode Island	30.13	765.3	30.18	766.6	58	14.4	87	S	4	1.8			10n		SW	0.04	1.0	Light rain	
New York, New York	30.05	763.3	30.23	767.8	54	12.2	79	SW	10	4.5		1ck	2s	SW	Calm	0.05	1.3	Fair	
Norfolk, Virginia	30.23	767.8	30.29	769.4	59	15.0	94	NW	3	1.3			10s		Calm	0.02	0.5	Cloudy	
North Platte, Nebraska	26.84	681.7	29.38	746.2	42	5.6	74	NW	10	4.5		0	0			0	0	Clear	
Olympia, Washington Ter	29.96	761.0	30.00	762.0	49	9.4	93	Calm	0	0			10s		Calm	0.08	2.0	Cloudy	
Omaha, Nebraska	28.56	725.4	29.60	751.8	58	14.4	82	S	9	4.0		2c	Sm'e	Calm	Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.79	756.7	30.12	765.0	55	12.8	81	SW	6	2.7	.....	0	8s	.....	NW	0	0	Fair	
Pembina, Dakota	29.04	737.6	29.90	759.4	27	— 2.8	100	W	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.19	766.8	30.24	768.1	54	12.2	80	NW	6	2.7	.....	0	Fog	.....	Calm	0.09	2.3	Clear	
Phœnix, Arizona	28.69	728.7	.....	.....	64	17.8	39	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	24	— 4.4	48	W	36	16.1	.....	5cs	0	Calm	.....	0	0	Fair	
Pioche, Nevada	24.05	610.9	29.82	757.4	51	10.6	22	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.16	766.1	58	14.4	88	W	4	1.8	.....	2k	0	W	.....	Inap.	Inap.	Fair	
Port Huron, Michigan	29.42	747.3	30.09	764.3	50	10.0	86	S	8	3.6	.....	2ck	Fog	W	Calm	0	0	Foggy	
Portland, Maine	30.07	763.8	30.12	765.0	54	12.2	80	S	8	3.6	.....	5k	0	SW	.....	Inap.	Inap.	Fair	
Portland, Oregon	29.99	761.7	30.10	764.5	51	10.6	100	NW	1	0.4	.....	.....	Fog	.....	Calm	0.05	1.3	Foggy	
Prescott, Arizona	24.78	629.4	30.14	765.5	43	6.1	36	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.24	742.7	30.04	763.0	69	20.6	95	SE	5	2.2	.....	5c	0	S	.....	0	0	Smoky	
Punta Rassa, Florida	30.10	764.5	30.12	765.0	76	24.4	77	NE	8	3.6	.....	2cs	0	SW	.....	0	0	Fair	
Red Bluff, California	29.50	749.3	29.85	758.2	63	17.2	47	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.79	756.7	30.01	762.2	72	22.2	90	Calm	.....	.....	0	2cs	0	Calm	.....	0	0	Clear	
Rochester, New York	29.51	749.5	30.12	765.0	52	11.1	79	W	8	3.6	.....	1c	Haze	Calm	Calm	0	0	Clear	
Roseburg, Oregon	29.49	749.0	30.06	763.5	52	11.1	93	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sacramento, California	29.76	755.9	29.84	757.9	56.5	13.6	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.05	763.3	59	15.0	70	S	9	4.0	.....	0	5s	.....	S	0	0	Fair	
St. Marks, Florida	30.15	765.8	30.17	766.3	68	20.0	95	E	4	1.8	.....	1ck	1s	Calm	Calm	0	0	Clear	
St. Paul, Minnesota	28.87	733.3	29.67	753.6	52	11.1	66	N	7	3.1	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Salt Lake City, Utah	25.58	649.7	29.91	759.7	53.0	11.7	36	SW	2	0.9	.....	2c	0	Calm	.....	0	0	Clear	
San Antonio, Texas	29.32	744.7	29.89	759.2	73	22.8	90	Calm	0	0	.....	5k	0	Calm	.....	0.5	1.3	Fair	
San Diego, California	29.86	758.4	29.93	760.2	60	15.6	88	E	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.49	749.0	30.17	766.3	49	9.4	85	S	9	4.0	.....	0	Sm'e	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.20	767.1	30.23	767.8	57	13.9	81	W	15	6.7	.....	2k	2ks	W	W	0.10	2.5	Fair	
San Francisco, California	29.84	757.9	29.90	759.4	53	11.7	93	W	6	2.7	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	47	8.3	21	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.16	766.1	30.25	768.3	70	21.1	90	N	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.84	757.9	30.06	763.5	67	19.4	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.31	617.5	.....	.....	49	9.4	62	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.25	768.3	30.29	769.4	71	21.7	95	SE	1	0.4	.....	2k	0	SW	.....	0	0	Fair	
Springfield, Massachusetts	30.04	763.0	30.18	766.6	57	13.9	75	SW	3	1.3	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Stockton, Texas	26.94	684.3	29.94	760.5	60	15.6	66	SE	5	2.2	.....	4k	0	Calm	.....	0.10	2.5	Fair	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	55	12.8	93	SW	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Toledo, Ohio	29.43	747.5	30.11	764.8	51	10.6	79	SE	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	65	18.3	48	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.20	767.1	30.24	768.1	78	25.6	69	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.66	753.4	.....	.....	44	6.7	84	E	8	3.6	.....	Haze	2s	Calm	Calm	0.01	0.3	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	43	6.1	91	S	.....	.....	1	.....	10s	.....	S	0.16	4.1	Cloudy	
Uvalde, Texas	29.08	738.6	29.87	758.7	73	22.8	81	E	2	0.9	.....	2c	2s	SW	S	0	0	Fair	
Vicksburg, Mississippi	29.85	758.2	30.10	764.5	68	20.0	90	SE	8	3.6	.....	Haze	0	Calm	.....	0	0	Fair	
Virginia City, Montana	24.16	613.6	29.64	752.8	43	6.1	59	W	10	4.5	.....	.....	10s	.....	W	0.20	5.1	Cloudy	
Visalia, California	29.49	749.0	29.83	757.7	59	15.0	54	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.14	765.5	30.26	768.6	50	10.0	100	SW	7	3.1	.....	.....	Fog	.....	Calm	0.32	8.1	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	48	8.9	56	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.20	767.1	30.28	769.1	65	18.3	100	Calm	0	0	.....	.....	Fog	.....	Calm	0.02	0.5	Foggy	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	44	6.8	68	SW	2	0.9	.....	1cs	0	NE	.....	0	0	Clear	
Wood's Holl, Mass	30.13	765.3	30.18	766.6	57	13.9	93	W	3	1.3	.....	.....	10s	.....	SW	0.6	1.5	Cloudy	
Yankton, Dakota	28.42	721.9	29.68	753.9	48	8.9	85	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.59	751.6	29.75	755.6	64	17.8	57	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Havana, Cuba, W. I	30.13	765.3	30.18	766.6	22.5	— 5.3	93	N	5	2.2	.....	.....	9s	.....	N	0.06	1.5	Cloudy	J. Fortescue, W. Wood
Santiago de Cuba, W. I	30.00	762.0	30.02	762.5	80	26.7	78	SE	1.2	0.5	.....	4ck	0	Calm	.....	0.64	16.3	Fair	Chas. Hasselbrink.
St. Thomas, W. I	29.99	761.0	29.99	761.7	80	26.7	82	N	.....	.....	1	2c	0	N	.....	.....	.....	.....	Robert Mason.
Kingston, Jamaica, W. I	.....	.....	.....	.....	83	28.3	87	NE	3	1.3	.....	.....	8s	.....	.....	0.33	8.4	Cloudy	G. O. Gellich.
Navassa, W. I	30.14	765.5	30.15	765.8	82	27.8	87	Calm	0	0	.....	2c	2s	Calm	.....	0	0	.....	James Gall.
Paramaribo, D. Guiana, S. A	29.91	759.7	29.99	761.7	84	28.9	.....	NE	11.7	5.2	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Medellin, Colombia, S. A	29.98	761.5	29.98	761.5	84	28.9	79	NE	.....	.....	2	3c	5k	E	.....	0	0	Fair	C. J. Hering
Portland, Jamaica, W. I	25.22	640.6	.....	.....	68.5	20.3	78	Calm	0	0	.....	.....	8ks	.....	.....	0.10	2.5	.....	Thomas Herran
	29.79	756 7	30.10	764.5	73	22.8	90	E	.....	.....	4	k	.....	.....	.....	Blank	Blank	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6 285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,650 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,562.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Up'er. From—	Clouds. Direction. Low'r. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.35	770.9	76	24.4	76	24.4	82	NE	6	2.7	.....	.....	5	.....	SE	0	0	.....	.....	Fair.....	
Navy Yard, Portsmouth, N.H	30.10‡	764.5‡	.....	.....	55	12.8	87	SSW	1	0.4	.....	10	.....	.....	.....	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan.....	30.34*	770.6*	62.5	16.9	58.5	14.7	64	E	.....	.....	2	.....	1ck	.....	NE	0	0	.....	.....	Fair.....	
Adams. S. 41° 02′, W. 87° 32′.....	30.05	763.3	62	16.7	52	11.1	93	WSW	.....	.....	2	.....	10	.....	WSW	.....	.....	Mod'ate	WSW	Cloudy	
Alaska, Valparaiso, Chili.....	30.28	769.1	63	17.2	58	14.4	70	Calm	.....	.....	0	.....	0	.....	.....	0	0	Smooth	.....	Hazy.....	
Alliance, Volo, Turkey.....	30.21‡	767 3‡	.....	.....	70	21.1	57	SSE	.....	.....	0-1	.....	4	.....	S	.....	.....	.....	.....	Pleasant.....	
Ashuelot. Kobe, Japan	30.34	770.6	63	17.2	62	16.7	51	E	.....	.....	3	.....	5	.....	E	.....	.....	Smooth	.....	Pleasant.....	
Canonicus, New Orleans, La.....	30.05	763.3	53	11.7	73	22.8	90	E	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado. New York, N. Y.....	30.23‡	767.8‡	.....	.....	57	13.9	75	W	8	3.6	.....	.....	5	.....	WNW	0.15	3.8	.....	.....	Foggy	
Constitution, Havre, France.....	.....	.....	.....	.....	64	17.8	89	SW	.....	.....	4	.....	3	.....	Calm	.....	.....	.....	.....	Pleasant.....	
Despatch. Gulf of Volo, Turkey.....	30.25‡	768.3‡	.....	.....	68	20.0	60	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, S. 36° 31′, W. 18° 0′.....	30.04	763.0	60	15.6	58	14.4	94	WNW	.....	.....	6	.....	8	.....	NW	.....	.....	Mod'ate	NW	Drizzling.....	
Franklin, Norfolk, Va.....	30.34	770.6	63	17.2	61	16.1	??	W	6	2.7	.....	.....	10	.....	Calm	0	0	.....	.....	Cloudy.....	
Gettysburg N. 35° 16′, E. 16° 42′...	30.12‡	765.0‡	.....	.....	78	25.6	??	ESE	.....	.....	1	.....	1	.....	Calm	0	0	Smooth	.....	Clear.....	
Guard. S. 13° 21′, W. 33° 58′.....	30.13	765.3	79	26.1	77	25 0	82	E	.....	.....	4	.....	2	.....	E	.....	.....	Long	E	Clear	
Hartford, Rio de Janeiro, Brazil..	30.08	764.0	.....	.....	75	23.9	72	NNW	3.6	1.6	.....	.....	5	.....	.....	0	0	.....	.....	Fair	
Marion, Trieste, Austria.....	30.09	764.3	69	20.6	71	21.7	71	NW	.....	.....	1	.....	10	.....	SW	0	0	.....	.....	Cloudy.....	
Michigan, Erie, Pa.....	30.02†	762.5†	.....	.....	52	11.1	86	SSE	.....	.....	2	.....	5	.....	SW	.....	.....	.....	.....	Fair	
Monocacy. Yokohama, Japan	30.40‡	772.1‡	.....	.....	61	16.1	61	ESE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
New Hampshire, Port Royal, S. C.....	30.38	771.6	76	24.4	74	23.3	90	E	15	6.7	.....	.....	.....	.....	.....	0	0	.....	.....	Clear	
Onward, Callao, Peru.....	30.12†	765.0†	.....	.....	61.5	16.4	86	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.26	768.6	56	13.3	51	10.6	86	WSW	.....	.....	1	.....	8	.....	W	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	53	11.7	86	S	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
Plymouth. N. 39°, W. 67° 42′.....	30.30	769.6	71	21.7	71	21.7	85	NNW	.....	.....	3	.....	5	.....	N;W	.....	.....	Mod'ate	N	Pleasant... ..	
Powhatan, Portsmouth, N. H.....	30.14‡	765.5‡	.....	.....	56	13.3	87	SSW	4.6	2.1	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Ranger. Hong-Kong, China.....	29.91	759.7	81	27.2	80	26.7	82	ESE	.....	.....	3	.....	10	.....	NW	.....	.....	.....	.....	Squally.....	
Rio Bravo, Brownsville, Texas.....	29.96	761.0	74	23.3	76	24.4	95	E	.....	.....	1	.....	10	.....	SE	.....	.....	.....	.....	Cloudy	
Santee, Annapolis, Md	30.18‡	766.6‡	.....	.....	52	11.1	93	SW	.....	.....	1	.....	10	.....	.....	0.23	5.8	.....	.....	Foggy	
Saratoga, Philadelphia, Pa.....	30.15	765.8	.....	.....	56	13.3	75	NW	.....	.....	2	.....	6	.....	NW	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa.....	30.14	765.5	59	15.0	55	12.8	87	NW	3	1.3	.....	.....	10	.....	SW	0.04	1.0	.....	.....	Cloudy.....	
Supply, Havre, France.....	29.60	751.8	65	18.3	65	18.3	73	WSW	.....	.....	3	.....	2	.....	WSW	.....	.....	.....	.....	Clear.....	
Swatara. Boston, Mass.....	30.17‡	766.3‡	.....	.....	56	13.3	87	SSW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Trenton, N. 37° 36′, W. 9° 57′.....	30.03‡	762.7‡	.....	.....	66	18.9	94	NNW	.....	.....	2	.....	2	.....	N;W	0	0	Light	SW	Clear.....	
Tuscarora. N. 27° 41′, W. 114° 55′	29.72	754.9	65	18.3	66	18.9	94	Calm	.....	.....	0	.....	0	.....	.....	0	0	Smooth	.....	Clear	
Vandalia, Cartagena, Spain.....	29.95‡	760.7‡	.....	.....	73	22.8	55	SW	.....	.....	2	.....	8	.....	WSW	.....	.....	.....	.....	Cloudy.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	52	11.1	??	SW	7	3.1	.....	.....	10	.....	.....	Inap.	Inap.	.....	.....	Drizzling.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.			CHARACTER.	DIRECTION FROM—		
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35° 09′, W. 156° 34′		30.36*	771.1*	69	20.6	95	SE			3					Light	Small	NW	Blue sky	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T.		30.02*	762.5*	55	12.8	87	SE			1		6		SE	Blank			Overcast	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 48° 08′, W. 41° 50′		29.75*	755.6*	58	14.4	??	N			7		Sk		WNW	Blank	High	NE	Squally	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 39° 30′, W. 128° 18′		29.87*	758.7*	65	18.3	84	NW			4		Fog		NW		Smooth	NW	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 38° 9′, W. 72° 27′		30.18	766.6	66.5	19.2	74	NW			5		8		NW	0	3	NW	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana. N. 48° 30′ W. 47° 30′		30.14*	765.5*	52	11.1	83	N			2		4		NNE	Heavy	Mod'ate	Cross	Clearing	Captain Sargent.
S. S. Ohio. N. 46° 08′, W. 49° 27′		30.14	765.5	51.6	10.8	90	SW			4		9?		SW	0	Heavy	Irregular.	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 10° 50′, W. 66° 35′							ESE	6	2.7		5ck	2k		E	0.04 in or 1.0 mm.	Swell	NE	Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 9, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 1—10.	Clouds. Amount. Low'r 1—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.10	764.6	74.3	23.5	78	NNW			4		5			0	0	Cloudy	Kesxuche.
Algiers			30.02	762.6	75.2	24.0	72	W			1		1			0	0	Very fair	Touriliere.
La Calle			30.00	763.5	80.2	26.8	72	NNW			1		6			0.217	5.5	Cloudy	Foufrede.
Tunis			30.04	763.1	82.0	28.3	57	N			5		7			0.287	7.3	Very cloudy	Jacques.
Sfax			30.12	765.0	82.4	28.0		S			7		5			0	0	Cloudy	Gau.
Saida			30.03	762.8	77.0	25.0	40	N			1		4			0	0	Cloudy	Herbin.
Tebessa			30.04	763.1	77.0	25.0	40	SW			6		4			Blank	Blank	Cloudy	Watrin.
Geriville			30.02	762.6	72.7	22.6	55	N			3		0			0	0	Clear	Brugniaux.
Laghouat			30.09	764.2	78.8	26.0	50	Calm			0		0			0	0	Clear	Bertrand.
Biskra			30.09	764.3	85.1	29.5	46	ENE			1		3			0	0	Pretty fair	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.44	747.7	29.98	761.5	59.9	15.5	67	NE			1		10			0.098	2.5	Raining	Prof. Ivan Stoïr.
Cracow, I. R. Observatory	29.17	740.9	29.91	759.6	72.7	22.6	50	SW			2		0			0	0		Dr. Wierzbiski
Eperies	29.14	740 1	30.00	762.0	62.2	16.8	56	S			2		0			0	0		Julius Mikonk.
Gratz	28.73	729.8	29.97	761.2	59.0	15.0	83	E			2		10			0	0		Andreas Rospini.
Hermannstadt	28.58	725.8	30.01	763.0	59.7	15.4	56	SW			0		0			0	0		Prof. A. Gottschling.
Kremsmünster	28.67	725.7	29.90	759.4	55.9	13.3	93	Calm			0		10			0.055	1.4		Prof. O. Wagner
Lemberg	29.00	736.5	29.96	761.0	62.6	17.0	66	S			2		0			0	0		Dr. T. Stanecki.
Pola	29.77	756.2	29.92	760.0	69.8	21.0	85	SSE			4		10ks			1.402	35.6		I.R.Hydrographic Office
Szathmar	29.63	752.6	30.09	764.2	66.2	19.0	51	E			2					0	0		Julius Csics, S. J.
Szegedin	29.71	754.7	29.98	761.6	69.8	21.0	89	S			1		0			0	0		Karl Stancel.
Trieste	29.84	757.8	29.94	760.4	68.5	20.3	93	Calm			0		10			2.228	56.6	Raining	P. Busin.
Vienna	29.18	741.2	29.87	758.8	67.3	19.6	66	SSE			2		8			0	0		I. R. Central Met. Obs'y.

NOTE—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.43	722.2	29.03	760.3	54.1	12.3	78	WSW			2		8			0.181	4.6		Prof. M. Passau.
Brussels	29.61	752.1	29.81	757.1	50.4	15.2	71	SSW			5	0	4		SSW	0.073	1.85		Royal Observatory
Furnes	29.74	755.4	29.76	756.0	62.8	17.1	70	SSW			5		5			0.024	0.6		M. E. de Cae.
Maeseyck	29.74	755.4	29.87	758.7	62.1	16.7	74	SSW			4		6			0.059	1.5		M. Pierrot.

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

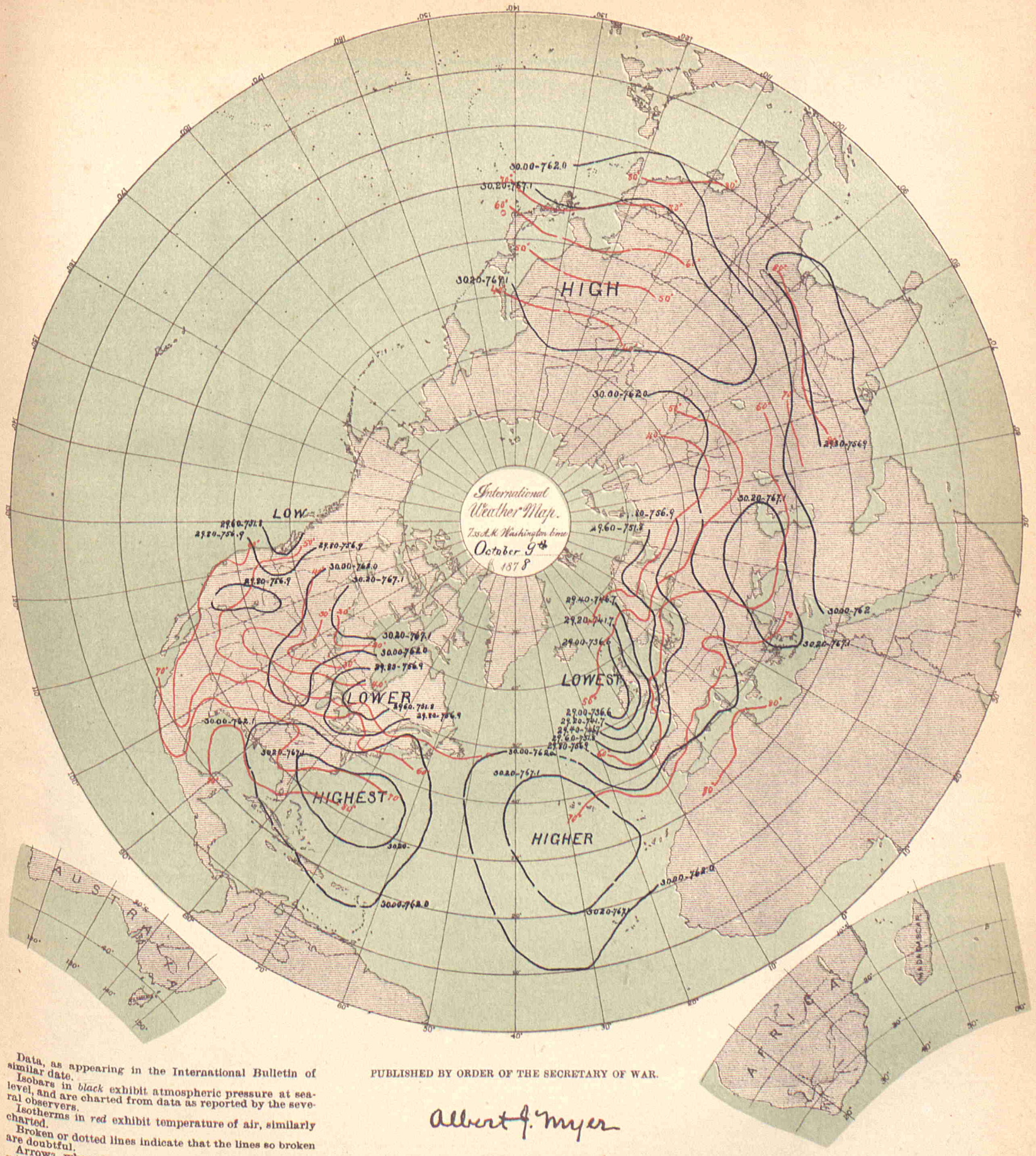
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.16	740.7	29.25	742.9	56.1	13.4	.....	SE	24	10.7	.....	.....	9	.....	.....	0.375	9.40	Squally	W. Boswell.
Ardrossan	29.09	738.9	29.10	739.1	58	14.4	.....	S	.....	.....	3	.....	9	.....	.....	.....	.....	Raining	George Carrick.
Armagh, Observatory	.....	.....	29.02	737.1	61.2	16.2	.....	S	16	7.6	.....	.....	5	.....	.....	.....	.....	D. clouds	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.21	741.9	57.7	14.3	.....	SE	26	11.6	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	28.94	735.1	29.33	745.0	59.2	15.1	.....	SW	.....	.....	4	.....	10	.....	.....	0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.92	760.0	29.94	760.5	84	28.9	.....	SE	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.61	749.5	62.0	16.7	.....	S	.....	.....	3	.....	10	.....	.....	Blank	Blank	Squally	H. Todd. [H. C.
Cardington	.....	.....	29.52	749.8	62.0	16.7	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.49	749.0	29.61	752.1	61.2	16.2	.....	SW	.....	.....	6	.....	9	.....	.....	.....	.....	Overcast	Lt. G. W. Morris, R. E.
Dartmoor	27.97	710.4	29.41	747.0	54.0	12.2	.....	SW	.....	.....	7	.....	10	.....	.....	.....	.....	Rain and fog	Alexander Watt.
Donaghadee	29.04	737.6	29.07	738.4	57	13.9	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.62	752.3	29.65	753.1	61	16.1	.....	SW	.....	.....	6	.....	6	.....	.....	.....	.....	Showery	J. Costello.
Falmouth, Observatory	29.14	740.1	29.36	745.7	59.6	15.3	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Squally	The Staff.
Fort Napier, (Natal)	27.59	700.8	29.91	759.7	72.6	22.6	.....	NE	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.66	753 4	29.88	758.9	87 5	30.8	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	28.88	733.5	56	13.3	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Showery	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.04	763.0	30.09	764.3	.....	.....	.....	E	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.93	734.8	29.14	740.1	58.0	14.4	.....	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	D. clouds	D. G. Maclean.
Great Yarmouth	29.59	751.6	29.60	751.8	61	16.1	.....	SSW	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.41	747.0	29.57	751.1	59.9	15.5	.....	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	The Staff, for G. B. Airy.
Guernsey	29.34	745.2	29.55	750.6	61	16.1	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Squally	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.39	746.5	61	16.1	.....	S	.....	.....	6	.....	10n	.....	.....	0 17	4.3	Raining	M. P. Moyle.
Holyhead	29.12	739.6	29.17	740.9	59	15.(	.....	SSW	.....	.....	5	.....	8	.....	.....	Blank	Blank	D. clouds	John Tilston.
Jersey	29.33	745.0	29.62	752.3	62.6	16.9	.....	SSW	.....	.....	6	.....	10	.....	.....	Blank	Blank	Overcast	J. Fisher.
Kew, Observatory	29.53	750.0	29.57	751.1	59.1	15.1	.....	S	21	9.4	.....	.....	10	.....	.....	.....	.....	Raining	The Staff.
Kingstown	29.08	738.6	29.11	739.4	60	15.6	.....	S	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.43	747.5	60.8	15.6	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	Wm. J Harrison, F.G.S.
Malta, (Mediterranean)	29.99	761.7	30.06	763.5	78	25.6	.....	SE	.....	.....	4	.....	8k	.....	.....	.....	.....	Overcast	Sergt. Beckett.
Nairn	29.02	737.1	29.10	739.1	60	15.(	.....	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	¾ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.07	763.8	82.(	27.8	.....	SE	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.33	745.0	29.51	749.5	61.7	16.5	.....	S	.....	.....	6	.....	10d	.....	S	0.106	2.69	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.86	733 0	29.37	746.0	56.8	13.8	.....	S	.....	.....	5.6	.....	10	.....	.....	.....	.....	Raining	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.46	748.3	59	15.(	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling	H.E. Bellamy.
Plymouth	29.32	744.7	29.39	746.5	58.3	14.6	.....	SSW	.....	.....	6	.....	10	.....	.....	.....	.....	Squally	John Merrifield.
Roche's Point	29.02	737.1	29.06	738.1	59	15.0	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Gale	W. Kennedy.
Saint Ann's Head	29.07	738.4	29.24	742.7	58	14.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Squally	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.15	740.4	56.1	13.4	.....	SSE	20	8.9	.....	.....	4	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	30.14	765.5	70.0	21.1	.....	NE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky	Sergt. W. H. Lyne.
Sheffield	29.11	739.4	29.39	746.5	59.7	15.4	.....	S	.....	.....	6	.....	10	.....	.....	0.26	6.6	Overcast	W. F. Cooper.
Silloth, Rectory	29.13	739.9	29.16	740.7	59.6	15.3	86	SW	.....	.....	2	.....	8	.....	.....	0.125	3.18	D clouds	C. Edith Redford.
Sonyhurst, Observatory	28.87	733.3	29.28	743.7	57.2	14.0	.....	SE	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	Rev. S. J. Perry.
Stornoway, Lewis C. (Meteor.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	29.35	745.5	29.56	750.8	59.1	15.1	.....	S	.....	.....	2.3	.....	10	.....	.....	.....	.....	Squally	Rev. C. H. Griffith, F.M.S.
Thurso	29.15	740.4	29.21	741.9	58	14.4	.....	S	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.40	746.7	61	16.1	.....	S	.....	.....	8	.....	8	.....	.....	.....	.....	Gloomy	W. Newcombe.
Valencia, Observatory	28.83	732.3	28.85	732.8	50.2	10.1	.....	S	48	21.5	.....	.....	7	.....	.....	Blank	Blank	Squally	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.00	736.6	54.0	12.2	.....	N	.....	.....	8	.....	10k	.....	.....	0.01	0.3	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.96	761.0	30.16	766.0	72.1	22.3	54	E	13.0	5.8	.....	0	4	.....	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.12	739.6	29.21	741.9	54.8	12.7	65	N	12	5.4	.....	.....	10	.....	.....	0.03	0.8	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngerhuse.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Turner.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series Vessels.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 40° 40′, W. 65° 50′	.....	.....	30.19	766.8	62	16.7	.....	W	.....	.....	2	.....	3	.....	.....	3	.....	Blue sky	Capt. Alex. Wilson.
Barque Commewyne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 19° 55′, W. 62° 5′	.....	.....	30.00	762.0	85	29.4	.....	.....	.....	.....	3	.....	4	SW	.....	2	N	D. clouds	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.24	666.5	29.96	761 0	65.8	18.8	91	SE			1	3cs				0.2	5.1		Federico Maison.

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight; and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.70	754.3	29.74	755.5	63.7	17.6	76	NW			2		5						
Faröe	29.69	754.2	29.71	754.7	60.3	15.7	88	WSW			4		3						
Godthaab, (Greenland)																			
Stykisholm, (Iceland)																			
Thorshavn, (Faröe)	28.95	735.4	28.99	736.3	51.3	10.7	99	S			2		10						Rain and fog
Vestervig	29.50	749.4	29.67	753.7	59.4	15.2	85	SSW			4		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.30	744.1	29.85	758.1	62.2	16.8	81	SW			3		5		SW	0.024	0.6	Cloudy	Collignon, Director.
Amiens, Normal School	29.68	753.9	29.79	756.6	60.8	16.0	87	SE			2		5		NE	0	0	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.89	759.3	29.97	761.3	67.5	19 7	58	N			1		0			0.289	7.1	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.37	746.1	29.92	760.0	61.5	16.4	67	S			3		8km		W	0.291	7.4	Very cloudy	C. Saillard.
Beaumette Obsy (Angers)																			Albert Cheux.
Beauvais, Normal School	29.53	750.0	29.81	757.2	61.9	16.6	70	S			3		5		SSW	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.13	739.8	30.01	762.3	59.5	15.3	75	SSW			2		10		W	0.59	15.	Covered	Normal School.
Bourg-en-Bresse, N. School	29.16	740.6	30.08	764.0	59.5	15.3	73	W			1	5c		W		1.547	39.3	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.35	745.6	29.87	758.8	62.6	17.0	68	SSW			1		2km		SSW	0.28	7.	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.29	743.9	29.53	750.0	59.0	15.0	91	SW			6		10		SW	0.118	3.00	Raining	The Staff.
Carcassonne, Normal School	29.56	750.9	29.90	761.0	70.9	21.6	56	W			1		0			0	0	Clear	Septembre, Director.
Caen	29.58	751.2	29.65	753.0	65.5	18.6	77	S			6		5		SSW	0	0	Cloudy	M. Lair, Director.
Chartres, Normal School	29.23	742.4	29.78	756.5	61.3	16.3	98	SSE			4		5		NNW	0.12	3.		M. Vergier, Director.
Châlons-sur-Marne, N. School	29.59	751.6	29.95	760.6	62.4	16.9	63	SSW			3		5k		SSW	0.039	1.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.60	726.5	29.91	759.6	67.3	19.6	50	SE			1		5		SW	0.827	21.0	Cloudy	Alluard, Director.
Commercy, Normal School	29.10	739.0	29.97	761.1	57.6	14.2	80	W			1		ok		W	0.04	1.		Dr. Coulet, Director.
Commune de Gréasque *	28.86	733.1	30.00	762.1	63.1	17.3	67	NW			4		2	NW		0.762	19.1	¼ covered	M. Kina.
Grenoble, Normal School	29.14	740.1	29.93	760.2	62.2	16.8	72	NNW			2		5k		SSW	0	0	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.51	749.5	29.81	757.2	63.0	17.2	72	S			4		8		S	0	0	Very cloudy	Pourrier, Director.
Lons-Le-Saulnier, N. School	29.08	738.6	29.98	761.6	59.9	15.5	73	SE			1		2		SW	0.512	13.	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	29.57	751.1	29.67	753.6	60.4	15.8	91	S			10				SW	0.728	18.5		T. Carré, Director.
Mâcon, Normal School	30.02	762.5	30.05	763.3	61.5	16.4	77	W			1		5		W	0.256	6.5	Cloudy	M. Galzin, Director
Mirecourt, Normal School	28.91	734.2	29.94	760.4	59.0	15	75	S			1		2km		SW	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.77	756.1	29.97	761.1	70.2	21.2	48	S			1		2		S	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.93	734.9	29.98	761.5	64.0	17.8	61	N			1		5	S	N	1.89	48.	Cloudy	M. Cantier.
Puy de Dome (Summit)	25.15	638.9			44.8	7.1	91	W			1		5		SW	0.846	21.5		Allhard, Director.
Rochefort, Naval Obsy	29.85	758.1	29.88	758.9	67.5	19.7	75	SSW			3		2	SW	SW	0.35	9.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.71	754.7	29.81	756.9	64.0	17.8	63	S			2		5		S	0.157	4.0	Cloudy	F. Lucard, Director.
Saint Malo (Port)			29.85	758.0	64.8	18.2	68	SSW			4		5		SSW	0.320	5.60	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.68	753.8	29.84	758.0	63.7	17.6	64	S			2-3		2		SSW	0	0		E. Renou.
Tarbes, Normal School	28.97	735.9	30.03	762.8	64.4	18	80	SW			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.30	744.1	29.99	761.8	64.8	18 2	78	SSE			1		5		SE	0.522	13.25	Cloudy	M. Gausserand, Director
Sur-Sarthe.																			
Fort de France, Martinique	29 92	760.0	29.95	760.7	82.4	28										0	0		L'Abbé Marchès.
Lyons, Observatory			29 68	753.9									3			0.098	2.5		
Marseilles, Observatory			29.95	760.6	67.6	19.8	51	NW			2		0			0	0	Clear	The Staff.
Mont-Louis	24.87	631.6	30.18	766.9	54.0	12.2	42	SSW			4		1		SE	0.047	1.2		M. Cave.
Nice			29.90	759.5	67 8	19.9	81	E			1		2			1.378	35.0	¾ Covered	Dr. A. Niepce.
Paris, Montsouris Obsy	29.55	750.5	29.82	757.5	63.1	17.3	65	S			4		5		SSW	0.067	1.7		Marié Davy, Director
Perpignan			30.02	762.6	70.2	21.2	53	S	7.4	3.33			0			0	0		Dr. Fines.
Pic du Midi, (Summit, H. P.																			M. Baylac.
Pic du Midi, (Plantade)	22.51	571.8			46.4	8.0		SW			4		0			0.122	3.1	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.29	744.0	30.02	762.4	64.6	18.1	66	SSE			1		1			0	0		The Staff.
Tours	29.85	758.1	29.85	758.1	65.1	18.4	64	WSW			3		7		WSW	0.201	5.1		C. Marquet.
Versailles			29.82	757.5	65.8	18.8	45	SW			4		7			0.011	0.28	Cloudy	Dr. A. Berigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.3	30.19	766.9	66 0	19.2	98	NE	3.6	1.6			10n			0.236	6.0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–2.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.97	735.9	29.81	757.2	57.7	14.3	81	NW			2		10			0.04	1.	Raining	Prof. Dr. Hoh.
Berlin	29.67	753.7	29.84	758.0	65.3	18.5	67	W			1		4			0	0		Prof. Arndt.
Breslau	29.34	745.3	29.87	758.7	70.0	21.1	46	WSW			2		1			0	0		Royal University Obs'y.
Carlsruhe	29.50	749.3	29.92	760.0	61.3	16.3	80	SW			2		5			0	0		Albert Senz.
Cassel	29.28	743.6	29.88	758.9	62.2	16.8	76	SSE			1		7	SW		0.200	5.07		Dr. H. Möhl.
Crefeld	29.67	753.7	29.84	757.8	64.4	18.0	64	SW			4		3k			0	0		Director Lose.
Emden	29.79	756.6	29.82	757.5	63.7	17.6	68	SW			2		0			0	0		Prof. Prestel.
Frankfort on the Main	29.55	750.5	29.91	759.6	64.6	18.1		SW			2		4			0.035	0.9		Physical Society.
Friedrichshafen	28.56	725.3	29.98	761.4	56.8	13.8	85	SSE			3		9	SSW		0	0		M. Wilhelm.
Hamburg	29.74	755.5	29.81	757.2	63.5	17.5	70	W			3		3k			0	0	Clear	Captain F. Hegemann.
Kiel	29.78	756.4	29.80	756.8	61.7	16.5	73	SW			2		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.78	756.5	29.87	758.6	63.1	17.3	70	SE			3		2			0	0		Prof. E Luther.
Köslin			29.76	756.0	62.4	16.9		Calm			0		1			0	0		H. Müller.
Leipsic, Observatory	29.47	748.6	29.88	759.0	65.8	18.8	62	WNW			1		9	W		Inap.	Inap.	Sprinkling	Prof. Bruhns.
Memel, Naval School	29.84	757.8	29.85	759.0	61.7	16.5	69	SSE			2		2c;cs						Reinbrecht and Skalweit.
Neufahrwasser	29.80	756.9	29.82	757.3	65.1	18.4	62	SSE			3		5			0	0		A. Lothes.
Posen	29.58	751.4	29.87	758.6	64.6	18.1	60	SW			6		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.42	747.2	29.96	760.9	62.2	16.8	80	Calm			0		7	W		0.100	2.54		Astronomical Observatory.
Stuttgart	28.99	736.4	29.94	760.4	58.1	14.5	86	W			1		10			0.028	0.7		Prof. Schoder.
Treves, (Trier)	29.37	746.0	29.89	759.2	60.4	15.8	73	W			5		4			0.002	0.04		Prof. Flesch.
Weissenburg, (Bavaria)	28.45	722.5	29.93	760.1	54.5	12.5	93	WNW	2.7	1.2			10		WNW	0.102	2.6	Light rain	Dr. Von Bebber.
Wustrow, Naval School	29.78	756.5	29.81	757.1	59.9	15.5	88	SW			2		3s			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.79	756.6	30.17	766.2	75.9	24.4		SW			1.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.43	747.4	29.90	759.4	89.1	31.7	51	W					0			0	0		
Bombay	29.83	757.6	29.87	758.6	85.2	29.6	81	NNW	20	8.9			0			0	0	Blue sky	
Poona	27.93	709.3	29.92	760.0	81.8	27.7	59	WNW					4		WNW	0	0	Blue sky	
Lahore	29.05	737.8	29.78	756.5	85.0	29.4	38	Calm	1.4	0.6						0	0	D. clouds	
Belgaum	27.34	694.5	29.87	758 6	79.5	26.4	65	NE	6	2.7			3			0	0	Blue sky	
Roorkee	28.87	733.3	29.76	755.9	82.8	28.2	43	Calm	3	1.3					NE	0	0	D. clouds	
Agra	29.23	742.4	29.78	756.3	91.7	33.2	37	W								0	0		
Nagpur	28.77	730.8	29.80	757.0	85.9	29.9	57	Calm	4.6	2.1			2			0	0		
Lucknow	29.37	746.1	29.74	755.4	86.9	30.5	45	Calm	0.9	0.4						0	0	D. clouds	
Allahabad	29.44	747.8	29.75	755.6	81.3	27.4	62	Calm	2.3	1.0			0			0	0	Blue sky	
Patna	29.55	750.5	29.73	755.1	84.8	29.3	72	Calm	0.1	0.04			0			0	0	Blue sky	
Hazaribagh	27.75	704.9	29.76	755.8	79.6	26.4	56	WNW	5.7	2.6			0			0	0	Blue sky	
Cuttack	29.67	753.5	29.75	755.5	88.1	31.2	62	W	0.3	0.1			3			0	0	Blue sky	
Calcutta (Alipore)	29.71	754.6	29.73	755.1	83.4	28.6	82	WNW	1.0	0.4			0			0	0	D. clouds	
Goalpara	29.35	745.5	29.74	755.3	82.7	28.2	69	Calm	1.3	0.6			0			0	0	Blue sky	
Chittagong	29.69	754.2	29.78	756.5	82.4	28.0	87	Calm	1.2	0.5			6			0	0	Blue sky	
Sibsagar	29.44	747.8	29.78	756.4	77.4	25.2	80	NE	2.9	1.3			10	W	W	0.30	7.6	Misty	
Jubbulpore	28.46	722.8	29.81	757.2	84.8	29.3	58	Calm	2.5	1.1						0	0	D. clouds	
																		Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Udine	29.56	750.7	29.96	761.0	61.0	16.1	92	E	0.7	0.3	.....	.....	10	.....	.....	1.732	44.0	.....	Prof. Giovanni Clodig.
Padua	29.80	757.0	29.91	759.8	68.2	20.1	75	E	2.5	1.1	.....	.....	4	ESE	.....	0.643	16.3	.....	Prof. Dott. Lorenzoni
Vicenza	29.72	754.9	29.91	759.7	68.0	20.0	73	SE	1.3	0.6	.....	.....	4	S	.....	1.063	27.0	.....	Conte Alm. Da Schio.
Bergamo	28.59	726.2	29.90	759.4	57.6	14.2	87	SW	.....	.....	4	.....	9	.....	.....	3.228	82.0	.....	Prof. Trionfini Carlo.
Milan	29.39	746.5	29.90	759.4	62.3	16.8	79	E	.....	.....	2	.....	6	NW	.....	0.051	1.3	.....	Prof. Schiaparelli.
Moncalieri	29.01	736.8	29.91	759.6	63.7	17.6	76	SE	3.1	1.4	.....	.....	2	NE	.....	0.819	20.8	.....	Prof. P. F. Denza.
Mondovi	28.02	711.6	29.91	759.7	60.8	16.0	77	N	.....	.....	2	.....	2	N	.....	0.425	10.8	.....	Prof. D. C. Bruno.
Porto Maurizio	29.69	754.1	29.91	759.7	69.3	20.7	65	S	.....	.....	2	.....	8	ENE	.....	1.398	35.5	.....	Prof. L. Vassallo.
Genoa	29.72	755.0	29.89	759.3	70.7	21.5	59	SE	9.4	4.2	.....	.....	4	NW	.....	1.039	26.4	.....	Prof. G. M. Garibaldi.
Parma	29.59	751.6	29.90	759.4	65.1	18.4	73	NE	.....	.....	4	.....	4	.....	.....	0.488	12.4	.....	Prof. P. Pigorini.
Florence	29.71	754.7	29.97	761.1	61.3	16.3	85	ENE	.....	.....	2	.....	10	WSW	.....	1.728	43.9	.....	Cav. F. Meucci.
Leghorn	29.82	757.5	29.91	759.6	68.0	20.0	68	SW	14.3	6.4	.....	.....	5	W	.....	0.591	15.0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.41	721.7	29.96	760.9	60.1	15.6	66	SW	.....	.....	2	.....	7	.....	.....	0.591	15.0	.....	Prof. P. Serpieri
Rome	29.82	757.4	29.99	761.8	71.4	21.9	66	W	11.2	5.0	.....	.....	9	.....	.....	1.575	40.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.83	757.6	30.03	762.7	71.6	22.0	77	SW	.....	.....	6	.....	10	SW	.....	0.472	12.0	.....	Prof. L. Palmieri.
Lecce	29.87	758.8	30.12	765.1	72.7	22.6	56	ESE	12.5	5.6	.....	.....	9	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.82	757.3	30.00	762.1	73.0	22.8	45	NW	.....	.....	4	.....	4	W	.....	0.315	8.0	.....	Prof. A. Pacinotti.
Cosenza	29.20	741.6	30.07	763.7	76.8	24.9	73	SW	.....	.....	4	.....	9	.....	.....	0.031	0.8	.....	Prof. F. D. Conti.
Palermo	29.78	756.4	30.03	762.7	73.9	23.3	65	WSW	3.8	1.7	.....	.....	10	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.07	763.7	30.14	765.6	73.9	23.3	65	S	13.7	6.1	.....	.....	9	W	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.92	759.9	30.11	764.8	67.7	19.8	93	N	8.4	3.8	.....	.....	10n;s	.....	NW	.....	.....	Rainy	.....
Tokei (Yeddo) Observatory	30.13	765.3	30.20	767.1	66.9	19.8	85	N	2.5	1.1	.....	.....	10ck;s	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	66.5	19.2	91	N	.....	.....	1	6ck	0	.....	.....	0	0	½ cloudy.	P. Ceballos.
Guadalajara	25.02	635.6	29.97	761.3	59.0	15.0	77	N	.....	.....	1	8	.....	E	.....	0	0	Cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.39	619.5	29.90	759.6	65.5	18.6	86	S	.....	.....	1	6c	2k	S	S	0.083	2.12	Misty	Prof. M. Leal.
Mexico	23.09	586.6	30.02	762.6	58.5	14.7	93	Calm	0	0	.....	0	4sk	.....	SE	0	0	Light fog	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	63.1	17.3	88	Calm	.....	.....	0	0	9ks	.....	.....	Inap.	Inap.	Misty	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpan	29.88	759.0	29.89	759.3	76.0	24.8	94	S	.....	.....	2	7	1	WSW	S	0.039	1.	Cloudy	M. M. Cházaro.
San Luis Potosi	24.17	613.1	30.06	763.4	57.0	13.9	50	E	.....	.....	.....	4	6	W	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.92	760.0	29.95	760.7	78.8	26.0	88	NW	.....	.....	.....	2ck	3sk	SW	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.31	592.2	30.08	764.0	59.0	15.0	88	ESE	0.4	0.2	.....	.....	10	.....	E	0	0	Covered	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.701	43.2	.....	M. V. de Leon, C. E.
Colima	28.29	718.5	29.91	759.7	79.9	25.5	85	E	0.8	0.4	.....	.....	10	.....	E	0.012	0.3	Rainy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,560.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.77	756.2	29.77	756.2	57.7	14.3	.....	S	.....	.....	5	.....	.....	.....	.....	0	0	.....	
Groningen	29.72	755.0	29.78	756.4	61.7	16.5	.....	S	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Helder	29.72	754.9	29.72	754.9	61.3	16.2	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.059	1.5	.....	
Hellevoetsluis	29.75	755.7	29.75	755.7	61.9	16.6	80	S	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.74	755.4	29.79	756.6	62.1	16.7	72	SSW	.....	.....	4	.....	5	.....	.....	.....	.....	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.37	746.1	29.43	747.5	56.5	13.6	60	S	32.4	14.5	.....	.....	10	.....	.....	0.610	15.5	Raining	
Brönö	29.30	744.3	29.34	745.3	50.7	10.4	88	Calm	0	0	.....	.....	10	.....	.....	0.406	10.3	Light rain	
Christiania	29.43	747.5	29.57	751.1	59.4	15.2	86	SW	11	5	.....	.....	7	.....	.....	0.118	3.0	.....	
Tromsö	29.55	750.5	29.59	751.6	38.8	3.8	87	Calm	0	0	.....	.....	7	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.06	763.4	30.24	768.2	66.2	19.0	73	NNW	6.3	2.8	.....	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.12	739.7	30.13	765.3	69.6	20.9	55	SW	4.0	1.8	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.6	30.15	765.8	74.7	23.7	65	SW	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.78	756.3	30.13	765.4	65.7	18.7	73	SW	10.1	7.2	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.19	766.7	30.26	768.5	69.8	21.0	54	N	10.5	4.7	.....	.....	4	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. B. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	1	NNE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Note.—The Sá da Bandeirá gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.5 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.89	759.2	29.99	761.8	72.1	22.3	46	S	2.6	1.17	.....	.....	1k	.....	.....	0	0	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	29.83	757.7	29.89	759.1	73.6	23.1	49	SW	2.8	1.26	.....	2	.....	SW	.....	0.500	12.7	Almost clear	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.11	688.6	.....	.....	58.6	14.8	80	SW	11.6	5.16	.....	.....	.....	.....	.....	0	0	Clear.	Domingo Martin y Perez
Madrid, Royal Observatory	27.88	708.1	30.15	765.7	67.1	19.5	56	SW	10.4	4.60	.....	0	3	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.93	760.3	30.08	764.0	79.0	26.1	37	N	2.1	0.92	.....	.....	.....	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.95	735.3	29.84	757.9	58.8	14.9	96	SSW	29.2	13.06	.....	.....	10	.....	.....	0.114	2.9	Raining	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.0	30.03	762.7	78.9	26.1	83	ESE	7.6	3.4	.....	0	0	.....	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.6	30.12	765.1	72.0	22.2	42	N	6.8	3.0	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.87	758.6	29.96	760.9	80.6	27.0	92	S	0	0	.....	1s	3k	S	S	0	0	Clear	Leonardo de Toledo, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:39 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.6 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.68	762.7	29.67	753.7	36.6	3.8	.....	NE	.....	.....	2	.....	10	.....	.....	0.16	4.	.....	
Umea	29.60	751.9	29.65	753.2	47.8	8.8	100	SW	.....	.....	2	.....	10	.....	.....	0.091	2.3	.....	
Hernosand	29.54	750.4	29.60	751.7	47.6	8.6	98	SSW	.....	.....	4	.....	10	.....	.....	0.008	0.2	Raining	
Stockholm	29.66	750.8	29.74	755.3	60.3	15.7	70	SW	.....	.....	2	.....	7	.....	.....	0.004	0.1	Foggy	
Wisby	29.72	755.0	29.78	756.5	63.9	17.7	68	SW	.....	.....	4	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.62	752.4	29.70	754.3	59.7	15.4	81	S	.....	.....	.....	.....	10	.....	.....	0.007	0.19	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.56	725.3	29.06	760.9	62.6	17.0	69	S	.....	.....	2	.....	3	.....	.....	0.673	17.1	Cloudy	The Observatory.
Zurich	28.37	720.5	29.99	761.8	57.6	14.2	81	S	.....	.....	1	.....	6	.....	.....	0.012	0.3	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.0 mm.; Thermometer, +2.8 cent.; Relative Humidity, —1 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.20	767.1	66.0	18.9	53	ENE	8	3.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.22	767.5	73.6	23.1	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.88	758.9	29.99	761.7	79.5	26.4	50	W	.....	.....	1	.....	3ks	.....	NW	0.47	11.9	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.33	745.0	29.62	752.3	60	15.6	.....	S	1	0.4	.....	.....	8s	.....	W	0.12	3.0	Cloudy	W. R. Bigg.
*Chatham, N. B	29.96	761.0	30.02	762.5	45	7.2	96	Calm	0	0	.....	8c	2ks	Calm	Calm	0.01	0.3	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.95	760.7	29.99	761.7	54	12.2	78	W	6	2.7	.....	5cs	0	Calm	.....	0.020	0.51	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.43	747.5	29.61	752.1	67.6	14.2	95	S	.....	.....	1	.....	10s	.....	.....	0.329	8.36	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.81	757.2	29.97	761.2	45	7.2	88	W	.....	.....	1	.....	.....	.....	.....	0.09	2.3	Cloudy	H. A. Johnson.
Esquimault, B. C	29.62	749.8	29.57	751.1	49.8	9.9	100	Calm	.....	.....	.....	9cs	0	.....	.....	0.19	4.8	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.94	760.5	29.96	761.0	43	6.1	88	S	9	4.0	.....	5k	5s	SW	SW	0.14	3.6	Cloudy	J. McWilliams.
Fredericton, N. B	29.08	761.5	30.05	763.3	48.0	8.9	86	NW	1	0.4	.....	4cs	0	.....	.....	0.38	9.7	Fair	Prof. Harrison.
*Fort Garry Manitoba	29.13	739.9	30.00	762.0	24	— 4.4	96	W	2	0.9	.....	Haze	2s	W	W	0	0	Fair	James Stewart.
Granton, Ontario	28.50	723.9	29.59	751.6	48	8.9	85	SW	.....	.....	5	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.90	759.4	30.03	762.7	53	11.7	92	W	10	4.5	.....	2ck	2ks	W	W	0.036	0.91	Fair	F. Allison, M. A.
Hamilton, Ontario	29.22	742.2	29.57	751.1	69.7	20.9	77	SW	.....	.....	8	10ck	0	.....	.....	0.02	0.5	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	29.90	759.4	29.93	760.2	45	7.2	92	SW	.....	.....	1	.....	10	.....	.....	0.25	6.3	Raining	E. Weedon.
*Kingston, Ontario	29.29	744.0	29.61	752.1	64	17.8	82	S	30	13.4	.....	5c	5ks	S	S	0.53	13.5	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	29.89	759.2	29.93	760.2	53.7	12.1	86	NW	10	4.5	.....	7ks	0	W	.....	0.11	2.8	Threatening	C. H. Rigby.
*Montreal, Quebec	29.51	749.5	29.71	754.6	50	10.0	93	SE	20	8.9	.....	.....	10n	.....	.....	0.45	11.4	Heavy rain	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.70	729.0	29.37	746.0	60	15.6	94	S	16	7.2	.....	.....	10n	.....	SW	0.61	15.5	Heavy rain	Rev. R. Mosley.
Peterboro, Ontario	28.84	732.5	29.56	750.8	66.2	19.0	84	W	.....	.....	2	.....	9ks	.....	.....	0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	28.96	735.6	29.62	752.3	64	17.8	89	SW	18	8.0	.....	5k	5ks	SW	SW	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	29.93	760.2	29.98	761.5	52.7	11.5	.....	NW	10	4.5	.....	.....	.....	.....	.....	0.12	3.0	Fine	Peter Grant.
Port Stanley, Ontario	29.01	736.8	29.63	752.6	66	18.9	83	S	28	12.5	.....	.....	10ks	.....	W	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.63	752.6	29.95	760.7	47	8.3	100	E	.....	.....	1	.....	10n	.....	SE	0.30	7.6	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.60	736.6	29.45	748.0	51	10.6	96	SE	8	3.6	.....	.....	10s	.....	SE	0.61	15.5	Raining	W. H. McIntyre.
St. Andrews, N. B	30.01	762.2	30.06	763.5	50	10.0	85	NW	1	0.4	.....	2k	2ks	NW	.....	0.01	0.3	Fair	Dr. Gove.
St. John, N. B	29.90	759.4	30.06	763.5	51	10.6	86	SW	5	2.2	.....	5k	0	.....	.....	0.31	7.9	Fair	G. Murdock, C. E.
*Saugeen, Ontario	28.75	730.2	29.44	747.8	63	17.2	88	SW	41	18.3	.....	.....	10k	.....	SW	0.36	9.1	Cloudy	K. Stewart.
Stayner, Ontario	28.69	728.7	29.43	747.5	65	18.3	94	W	18	8.0	.....	.....	10n	.....	W	0.09	2.3	Light rain	R. J. Cole.
Stratford, Ontario	28.33	719.6	29.56	750.8	62.9	17.2	81	SW	18.0	8.0	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A
*Sydney, C. B	29.91	759.7	29.94	760.5	53	11.7	93	SW	9	4.0	.....	5cs?	8ks	.....	W	0.09	2.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.20	741.7	29.57	751.1	63	17.2	86	SW	16	7.2	.....	.....	10n	.....	W	0	0	Threatening	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	47	8.3	92	S	.....	.....	.....	5ks	5sn	.....	.....	0.02	0.5	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,075 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.8 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.70	754.4	29.92	760.0	59	15.0	82	S	14	6.3	.....	.....	10s	.....	S	0	0	Cloudy	
Alpena, Michigan	28.98	736.1	29.61	752.1	49	9.4	77	W	21	9.4	.....	.....	10ks	.....	W	0.31	7.9	Cloudy	
Atlanta, Georgia	29.05	737.9	30.18	766.6	64	17.8	89	E	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Atlantic City, New Jersey	30.09	764.3	30.10	764.5	67	19.4	93	S	18	8.0	.....	.....	10s	.....	S	0	0	Cloudy	
Augusta, Georgia	30.05	763.3	30.23	767.8	66	18.9	89	Calm	0	0	.....	8ck;cs	Fog	SW	.....	0	0	Fair	
Baltimore, Maryland	30.03	762.7	30.08	764.0	66	18.9	89	SW	10	4.5	.....	.....	10s	.....	SW	Inap	Inap.	Cloudy	
Barnegat, New Jersey	30.08	764.0	30.10	764.5	66	18.9	89	SW	19	8.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Bismarck, Dakota	28.17	715.5	30.03	762.7	33	0.6	89	SE	6	2.7	.....	.....	10s	.....	Calm	0.19	4.8	Cloudy	
Boerne, Texas	28.52	724.4	.....	.....	67	19.4	89	N	2	0.9	.....	0	0	.....	.....	0.40	10.2	Clear	
Boise City, Idaho	26.90	683.2	29.86	758.4	45	7.2	60	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.88	758.9	30.04	763.0	61	16.1	82	SW	15	6.7	.....	8c;k	Haze	W;SW	Calm	Inap.	Inap.	Fair	
Brackettville, Texas	28.80	731.5	29.80	756.9	69	20.6	85	SE	3	1.3	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
Breckenridge, Minnesota	29.03	737.3	30.08	764.0	24	— 4.4	100	W	7	3.1	.....	5cs	0	W	.....	0	0	Fair	
Brownsville, Texas	29.86	758.4	29.93	760.2	74	23.3	90	N	4	1.8	.....	0	8ks	.....	NW	0.08	2.0	Fair	
Buffalo, New York	28.93	734.8	29.58	751.3	69	20.6	70	S	23	10.3	.....	5c	1s	SW	SW	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	65	18.3	35	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.60	751.8	29.85	758.2	57	13.9	69	S	12	5.4	.....	5ck	2s	W	W	0	0	Fair	
Cairo, Illinois	29.59	751.6	29.97	761.2	69	20.6	90	S	7	3.1	.....	0	8s	.....	SW	0	0	Cloudy	
Camp Apache, Arizona	.....	.....	.....	.....	41	5.0	57	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	63	17.2	19	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.75	679.4	30.24	768.1	43	6.1	51	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.42	696.5	29.97	761.2	34	1.1	61	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.25	768.3	30.26	768.6	73	22.8	90	E	4	1.8	.....	2k	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.18	766.6	30.21	767.3	66	18.9	89	SW	15	6.7	.....	0	5s	.....	SW	0	0	Fair	
Cape Lookout, N. Carolina	30.21	768.1	30.26	768.6	74	23.3	86	SW	3	1.3	.....	5k	0	SW	.....	0	0	Fair	
Cape May, New Jersey	30.09	764.3	30.12	765.0	67	19.4	90	S	27	12.1	.....	0	5s	.....	S	0	0	Fair	
Castroville, Texas	29.16	740.7	29.85	758.2	67	19.4	95	Calm	0	0	.....	0	8s	.....	SE	0.21	5.3	Cloudy	
Charleston, South Carolina	30.19	766.8	30.25	768.3	76	24.4	77	SE	3	1.3	.....	8c;cs	0	SW	.....	0	0	Fair	
Cheyenne, Wyoming	24.02	610.1	29.56	761.0	36	2.2	80	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.19	741.4	29.86	758.4	56	13.3	87	NW	12	5.4	.....	0	5s	.....	W	0.66	16.8	Fair	
Cincinnati, Ohio	29.35	745.5	29.98	761.5	67	19.4	89	SE	5	2.2	.....	.....	10n	.....	SW	0.37	9.4	Light rain	
Cleveland, Ohio	29.03	737.3	29.71	754.6	70	21.1	61	S	28	12.5	.....	.....	10s	.....	SW	0	0	Threatening	
Coleman City, Texas	28.17	715.5	29.81	757.2	59	15.0	88	Calm	0	0	.....	0	2s	.....	Calm	0	0	Fair	
Columbus, Ohio	29.08	738.6	29.90	759.4	61	16.1	94	S	14	6.3	.....	.....	10n	.....	S	0.17	4.3	Heavy rain	
Concho, Texas	28.01	711.4	29.64	752.8	66	18.9	90	S	4	1.8	.....	10k	0	S	.....	0	0	Cloudy	
Corsicana, Texas	29.50	749.3	29.95	760.7	69	20.6	95	S	3	1.3	.....	2cs	8s	Calm	S	0	0	Cloudy	
Davenport, Iowa	29.40	746.7	30.04	763.0	49	9.4	78	NW	5	2.2	.....	4cs	Haze	NW	Calm	0.28	7.1	Fair	
Decatur, Texas	28.79	731.3	29.93	760.2	66	18.9	69	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.18	741.2	29.95	760.7	68	20.0	84	S	2	0.9	.....	5cs	0	S	.....	0	0	Fair	
Denver, Colorado	24.79	629.6	30.01	762.2	38	3.3	45	S	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Des Moines, Iowa	29.20	741.7	30.10	764.5	42	5.6	83	NW	5	2.2	.....	5c	Haze	NW	Calm	0	0	Fair	
Detroit, Michigan	29.01	736.8	29.64	752.8	67	19.4	64	SW	20	8.9	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.39	695.7	29.70	754.4	43	6.1	92	NE	16	7.2	.....	0	Haze	.....	Calm	0	0	Hazy	
Dubuque, Iowa	29.31	744.5	30.01	762.2	48	8.9	70	NW	8	3.6	.....	10k	0	NW	.....	0.49	12.4	Cloudy	
Duluth, Minnesota	29.27	743.4	29.95	760.7	40	4.4	82	NW	14	6.3	.....	0	0	.....	.....	0.12	3.0	Clear	
Eagle Pass, Texas	29.18	741.2	29.90	759.4	68	20.0	95	E	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Eastport, Maine	29.98	761.5	30.05	763.3	52	11.1	79	S	3	1.3	.....	10ck	Haze	W	Calm	0.01	0.3	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	73	22.8	90	Calm	.....	.....	0	2c	2s	Calm	.....	0.12	3.0	Fair	
El Paso, Texas	.....	.....	.....	.....	68	20.0	56	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	28.95	735.3	29.62	752.3	70	21.1	70	SW	19	8.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Escanaba, Michigan	29.13	739.9	29.78	756.4	41	5.0	74	W	12	5.4	.....	0	0	.....	.....	0.97	24.6	Clear	
Florence, Arizona	28.40	721.3	30.00	762.0	61	16.1	40	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.61	752.1	48	8.9	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.20	640.1	30.10	766.1	56	13.3	62	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.44	747.8	29.96	761.0	66	18.9	89	E	3	1.3	.....	2cs	0	E	.....	0	0	Clear	
Fort Griffin, Texas	28.66	728.0	29.91	759.7	60	15.6	88	S	4	1.8	.....	0	2s	.....	Calm	0	0	Clear	
Fort McKavett, Texas	27.74	704.6	29.59	751.6	69	20.6	90	S	6	2.7	.....	.....	10s	.....	S	2.20	55.9	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.72	729.5	29.80	756.9	62	16.7	100	S	3	1.3	.....	0	Fog	.....	.....	0	0	Light fog	
Fredericksburg, Texas	28.24	717.3	29.74	755.4	73	22.8	85	S	1	0.4	.....	2k	0	Calm	.....	0.42	10.7	Fair	
Galveston, Texas	29.92	760.0	29.96	761.0	75	23.9	86	N	12	5.4	.....	.....	10n	.....	Calm	0.11	2.8	Light rain	
Graham, Texas	28.85	732.8	29.87	758.7	68	20.0	74	Calm	0	0	.....	0	2s	.....	Calm	0	0	Fair	
Grand Haven, Michigan	29.18	741.2	29.81	757.2	55	12.8	81	NW	32	14.3	.....	5k	2s	NW	W	0.54	13.7	Fair	
Indianapolis, Indiana	29.16	740.7	29.91	759.7	64	17.8	83	SW	5	2.2	.....	.....	10s	.....	W	0.65	16.5	Threatening	
Indianola, Texas	29.94	760.5	29.96	761.0	76	24.4	91	SE	5	2.2	.....	1cs	8s	Calm	S	0.09	2.3	Cloudy	
Jacksboro, Texas	28.81	731.8	29.90	759.4	67	19.4	84	SE	2	0.9	.....	0	2s	.....	Calm	0	0	Clear	
Jacksonville, Florida	30.14	765.5	30.16	766.1	74	23.3	76	E	4	1.8	.....	10cs	0	Calm	.....	0	0	Cloudy	
Keokuk, Iowa	29.40	746.7	30.01	762.2	50	10.0	86	NW	10	4.5	.....	.....	9s	.....	N	0.26	6.6	Cloudy	
Key West, Florida	30.01	762.2	30.04	763.0	82	27.8	79	E	7	3.1	.....	0	1ks	.....	Calm	0.01	0.3	Clear	
Kittyhawk, North Carolina	30.23	767.8	30.26	768.6	66	18.9	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Knoxville, Tennessee	29.18	741.2	30.18	766.6	60	15.6	88	Calm	0	0	.....	.....	10ks	.....	SW	0	0	Cloudy	
La Crosse, Wisconsin	29.24	742.7	29.98	761.5	43	6.1	91	N	6	2.7	.....	0	0	.....	.....	0.10	2.5	Clear	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	50	10.0	64	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.48	748.8	29.81	757.2	74	23.3	81	Calm	0	0	.....	5k	0	SE	.....	0	0	Fair	
Lead City, Dakota	24.64	625.8	29.91	759.7	45	7.2	61	S	10	4.5	.....	0	5s	.....	Calm	0.02	0.5	Fair	
Leavenworth, Kansas	29.20	741.7	30.04	763.0	50	10.0	86	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.58	751.3	29.94	760.7	58	14.4	84	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.49	749.0	30.03	762.7	65	18.3	84	W	8	3.6	.....	.....	10n	.....	W	0.47	11.9	Thunder-storm	
Lynchburg, Virginia	29.52	749.8	30.18	766.6	67	19.4	84	S	1	0.4	.....	0	2ks	.....	W	0	0	Clear	
Madison, Wisconsin	28.94	735.1	29.92	760.0	47	8.3	78	NW	18	8.0	.....	.....	10ks	.....	NW	0.26	6.6	Clearing	
Marquette, Michigan	29.06	738.1	29.76	755.9	42	5.6	83	W	13	5.8	.....	0	5s	.....	W	0.69	17.5	Fair	
Mason, Texas	28.30	718.8	30.02	762.5	63	17.2	94	Calm	0	0	.....	0	0	.....	.....	2.50	63.5	Clear	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.17	740.9	29.88	758.9	52	11.1	73	NW	19	8.5	.....	.....	10ks	.....	NW	0.48	12.2	Cloudy	
Mobile, Alabama	30.04	763.0	30.08	764.0	74	23.3	90	SE	5	2.2	.....	.....	10s	.....	S	0.09	2.3	Cloudy	
Montgomery, Alabama	29.92	760.0	30.15	765.8	71	21.7	75	SE	5	2.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Morgantown, West Virginia	28.96	735.6	29.98	761.5	66	18.9	79	SW	9	4.0	.....	2cs	5ks	W	SW	0	0	Cloudy	
Mt. Washington, N. H.	23.77	603.8	30.13	765.3	39	3.9	100	W	54	24.1	.....	.....	Fog	.....	W	0	0	Foggy	
Nashville, Tennessee	29.58	751.3	30.10	764.5	70	21.1	80	SE	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
New Haven, Connecticut	29.95	760.7	30.06	763.5	61	17.8	91	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
New London, Connecticut	30.05	763.3	30.10	764.5	63	17.2	94	S	17	7.6	.....	.....	10s	.....	SW	Inap.	Inap.	Threatening	
New Orleans, Louisiana	29.97	761.2	30.05	762.7	74	23.3	90	SE	6	2.7	.....	.....	10n	.....	Calm	0.15	3.8	Light rain	
Newport, Rhode Island	30.04	763.0	30.09	764.3	64	17.8	83	SW	8	3.6	.....	2k	8ks	SW	SW	Inap.	Inap.	Cloudy	
New York, New York	29.90	759.4	30.07	763.8	61	16.1	100	S	14	6.3	.....	.....	10n;fg	.....	Calm	Inap.	Inap.	Light rain	
Norfolk, Virginia	30.18	766.6	30.24	768.1	68	20.0	90	SW	9	4.0	.....	.....	10s	.....	SW	0	0	Cloudy	
North Platte, Nebraska	27.15	689.6	29.50	756.9	34	1.1	84	NW	2	0.9	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Olympia, Washington Ter.	29.62	752.3	29.66	753.4	48	8.9	93	S	5	2.2	.....	.....	8s	.....	S	0.44	11.2	Cloudy	
Omaha, Nebraska	29.99	736.3	30.09	764.3	42	5.6	83	N	4	1.8	.....	2c	2s	Calm	Calm	0	0	Fair	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.41	747.0	29.72	754.9	65	18.3	73	SW	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Pembina, Dakota	29.13	739.9	30.00	762.0	22	— 5.6	86	Calm	0	0	.....	0	8s	.....	Calm	0	0	Fair	
Philadelphia, Pa	30.04	763.0	30.09	764.3	65	18 3	94	SW	18	8.0	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.72	729.5	.....	.....	64	17.8	30	E	.....	.....	4	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.92	454.7	30.13	765.8	25	— 3.9	26	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.02	610.1	29.79	756.7	54	12.2	21	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.10	739.1	29.87	758.7	70	21.1	70	SW	22	9.8	.....	5c	0	W	.....	0	0	Fair	
Port Huron, Michigan	28.94	735.1	29.56	750.8	66	18.9	69	W	38	17.0	.....	10k	0	W	.....	0.03	0.8	Threatening	
Portland, Maine	29.97	761.2	30.02	762.5	56	13.3	75	S	8	3.6	.....	5k	0	W	.....	0	0	Fair	
Portland, Oregon	29.70	754.4	29.80	756.9	51	10.6	93	NW	2	0.9	.....	0	8s	.....	Calm	0.26	6.6	Threatening	
Prescott, Arizona	24.78	629.4	30.14	765.5	41	5.0	49	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.20	741.7	30.01	762.2	67	19.4	90	SE	2	0.9	.....	5cs	0	S	.....	0	0	Smoky	
Punta Rassa, Florida	30.06	763.5	30.08	764.0	77	25.0	86	E	9	4.0	.....	5cs;k	0	Calm;E	.....	0	0	Fair	
Red Bluff, California	29.46	748.3	29.81	757.2	61	16.1	66	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.76	755.9	29.97	761 2	74	23.3	90	NE	.....	.....	1	5c	Sm'e	Calm	.....	0.17	4.3	Smoky	
Rochester, New York	29.06	738.1	29.63	752.6	69	20.6	65	SW	15	6 7	.....	8cs	0	W	.....	0	0	Fair	
Roseburg, Oregon	29.27	743.4	29.82	757.4	54	12.1	93	SW	1	0.4	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
Sacramento, California	29.74	755.4	29.82	757.4	54	12.2	87	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.40	746.7	29.96	761.0	65	18.3	89	W	11	4.9	.....	.....	10s	.....	.....	0.10	2.5	Cloudy	
St. Marks, Florida	30.13	765.3	30.15	766.8	69	20.6	85	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
St. Paul, Minnesota	29.15	740.4	29.99	761.7	41	5.0	82	W	5	2.2	.....	0	0	.....	.....	0.06	1.5	Clear	
Salt Lake City, Utah	25.54	648.7	29.87	758.7	47.0	8.3	55	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.27	743.4	29.83	757.7	69	20.6	95	N	2	0.9	.....	.....	10ks	.....	Calm	0.34	8.6	Cloudy	
San Diego, California	29.87	758.7	29.95	760.7	58	14.4	94	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.10	739.1	29.74	755.4	66	18.9	69	SW	23	10.3	.....	10cs	0	NW	.....	Inap.	Inap.	Cloudy	
Sandy Hook, New Jersey	30.03	762.7	30.06	763.5	64	17.8	94	SW	12	5.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
San Francisco, California	29.84	757.9	29.90	759.4	55	12.8	84	SW	11	4.9	.....	0	2s;fg	.....	Calm;SW	0	0	Fair	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	44	6.7	30	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	70	21.1	90	NE	3	1.3	.....	5cs	Haze	SW	Calm	0	0	Fair	
Shreveport, Louisiana	29.78	756.4	29.99	761.7	72	22.2	95	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Silver City, New Mexico	24.32	617.7	.....	.....	51	10.6	44	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.23	767.8	30.27	768.8	71	21.7	95	SE	3	1.3	.....	2cs	1s	W	SE	Inap.	Inap.	Fair	
Springfield, Massachusetts	29.89	759.2	30.02	762.5	57	13.9	87	S	5	2.2	.....	.....	10n	.....	S	0.03	0.8	Light rain	
Stockton, Texas	29.90	683.2	29.90	759.4	58	14.4	53	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.99	761.7	30.04	763.0	58	14.4	94	S	16	7.2	.....	2c	Fog	W	.....	0	0	Foggy	
Toledo, Ohio	29.08	738.6	29.72	754.9	66	18.9	69	SW	20	8.9	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	63	17.2	57	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.17	766.3	30.20	767.1	77	25.0	73	SE	10	4.5	.....	5cs	2ks	Calm	Calm	0	0	Cloudy	
Umatilla, Oregon	29.23	742.4	.....	.....	57	13.9	75	W	8	3.6	.....	.....	10n	.....	W	0.09	.....	Light rain	
Unalashka, Aleutian Islands	.....	.....	.....	.....	40	4.4	100	SE	.....	.....	1	.....	10s	.....	W	Blank	Blank	Cloudy	
Uvalde, Texas	29.05	737.9	29.84	757.9	69	20.6	85	NE	1	0.4	.....	0	0	.....	.....	0.58	14.7	Clear	
Vicksburg, Mississippi	29.81	757 2	30.06	763.5	72	22.2	95	SE	5	2.2	.....	.....	10ks	.....	Calm	0.10	2.5	Cloudy	
Virginia City, Montana	23.97	608.8	29.45	748.0	42	5.6	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.50	749.3	29.87	758.7	53	11.7	67	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.99	761.7	30.10	764.5	66	18.9	92	SW	18	8.0	.....	.....	10ks	.....	SW	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	45	7.2	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.18	766.6	30.25	768.3	67	19.4	94	Calm	0	0	.....	5k	Fog	SE	Calm	0	0	Fair	
Winnemucca, Nevada	25.49	647.4	29.85	758.2	40	4.4	56	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	30.05	763.3	30.10	764.5	64	17.8	89	SW	16	7.2	.....	0	2ks	.....	SW	0	0	Clear	
Yankton, Dakota	28.84	732.5	30.19	766.8	20	— 1.7	83	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.64	752.8	29.81	757.2	59	15.0	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.15	765.8	30.20	767.1	21.5	— 5.8	93	NE	9	4.0	.....	4k	3s	E	NE	0.05	1.3	Cloudy	J. Fennemore, W. Wood.
Havana, Cuba, W. I	30.00	762.0	30.02	762.5	81	27.2	82	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.96	761.0	29.99	761.7	80	26.7	74	NE	.....	.....	1	0	0	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	86	30.0	76	NE	2	0.9	.....	4c	2ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.12	765.0	30.13	765.8	80	26.7	91	Calm	0	0	.....	2c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	84	28.9	.....	NE	8.3	3.7	.....	.....	.....	.....	.....	0	0	Clear	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.99	761.7	29.99	761.7	84	28.9	75	E	.....	.....	2	5k	5ks	E	.....	0	0	½ clouded?	O. J. Hering
Medellin, Colombia, S. A	25.26	641.6	.....	.....	66.6	18.9	85	Calm	0	0	.....	.....	10n	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I	29.78	756.4	30.10	764.5	75	23.9	85	E	.....	.....	.....	k	.....	.....	.....	.....	.....	.....	Robert Elworthy.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Bracketville, 1,026 (?) ft., or 312.7 ?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 ?) m.; Fort Sill, 1,100 ?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,627.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 ?) ft., or 944.9 (?) m.; Tucson, 2,646 (?) ft., or 776.7 ?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.004 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.35	770.9	79	26.1	79	26.1	86	E	20	8.9	.....	.....	10	.....	SE	0	0	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	29.96‡?	761.0‡?	.....	.....	56	13.3	81	SSW	4	1.8	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan	30.17*	766 3*	62.5	16.9	58.5	14.7	89	Calm	.....	.....	0	.....	10k;s	.....	NW	0	0	.....	.....	Overcast.....	
Adams, S. 40° 45′, W. 87° 07′	30.10	764.5	62	16.7	54	12.2	93	ESE	.....	.....	1	.....	10	.....	SSE	.....	.....	Smooth	SSE	Cloudy.....	
Alaska. S. 31° 03′ W. 72° 31′	30.14	765.5	65	18.3	55	12.8	93	S	.....	.....	3	.....	0	.....	.....	0	0	Long	S	Blue sky.....	
Alliance, Volo, Turkey	30.20‡	767.1‡	.....	.....	71	21.7	54	ESE	.....	.....	0–1	.....	1	.....	Calm	.....	.....	.....	.....	Clear.....	
Ashuelot. Kobe, Japan	30.20	767.1	62	16.7	64	17.8	94	E	.....	.....	6	.....	10	.....	W	.....	.....	Mod'ate	E	Cloudy.....	
Canonicus, New Orleans, La.	29.92	760.0	68	11.7	71	21.7	95	NE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado. New York, N. Y.	30.08‡	764.0‡	.....	.....	63	17.2	94	WSW	7	3.1	.....	.....	10	.....	S	0	0	.....	.....	Dense fog....	
Constitution, Havre, France	.....	.....	.....	.....	62	16.7	94	S	.....	.....	4	.....	10	.....	SSW	.....	.....	.....	.....	Cloudy	
Despatch, Dardanelles, Turkey	30.15‡	765.8‡	.....	.....	68	20.0	70	NE	.....	.....	3	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Essex, S. 36° 55′, W. 14° 55′	30.10	764.5	58	14.4	54	12.2	100	SSW	.....	.....	6	.....	10	.....	S	.....	.....	Mod'ate	SW	Drizzling.....	
Franklin, Norfolk, Va.	30.31	769.9	70	21.1	68	20.0	??	WSW	10	4.5	.....	.....	10	.....	WSW	0	0	.....	.....	Cloudy.....	
Gettysburg N. 34° 37′ 00″, E 19° 47′ 45″	30.13‡	765.3‡	.....	.....	78	25.6	??	ESE	.....	.....	1	.....	2	.....	Calm	0	0	Smooth	.....	Clear.....	
Guard. S. 11° 32′, W. 33° 46′	30.12	765.0	80	26.7	80	26.7	78	E	.....	.....	3	.....	0	.....	.....	.....	.....	Long	E	Clear.....	
Hartford, Rio de Janeiro, Brazil	29.96	761.0	.....	.....	77	25.0	77	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Marion, Trieste, Austria	29.93	760.2	69	20.6	68	20.0	84	S	.....	.....	1	.....	10	.....	Calm	Heavy	Heavy	.....	.....	Light rain...	
Michigan, Erie, Pa.	29.79†	756.7†	.....	.....	70	21.1	95	SSW	.....	.....	7	.....	10	.....	SSW	.....	.....	.....	.....	Cloudy.....	
Monocacy. Yokohama, Japan	30.22‡	767.6‡	.....	.....	60	15.6	71	N	.....	.....	1	.....	10	.....	N	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.	30.39	771.9	78	25.6	76	24.4	82	E	6	2.7	.....	.....	2?	.....	W	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru	30.12†	765.0†	.....	.....	60	15.6	94	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.32	770.1	58	14.4	55	12.8	87	W	.....	.....	2	.....	10	.....	W	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C.	.....	.....	.....	.....	67	19 4	95	S	.....	.....	4	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
Plymouth. N. 37° 15′, W. 66° 51′	30.38	771.6	77	25?0	77	25.0	70	N	.....	.....	1	.....	2	.....	.....	.....	.....	Long	NNW	Clear.....	
Powhatan, Portsmouth, N. H.	30.06‡	763.5‡	.....	.....	56	13.3	81	S	4.5	2.1	.....	.....	8	.....	.....	0.27	6.9	.....	.....	Cloudy.....	
Ranger. Hong-Kong, China	30.07	763.8	83	28.3	82	27.8	87	E	.....	.....	2	.....	10	.....	SE	.....	.....	.....	.....	Rainy	
Rio Bravo. Brownsville, Texas	29.90	759.4	77	25.0	77	25.0	95	N	.....	.....	1	.....	8	.....	NW	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	30.05‡	763.3‡	.....	.....	68	20.0	84	SW	.....	.....	2	.....	8	.....	SW	0	0	.....	.....	Cloudy	
Saratoga, Philadelphia, Pa.	29.96	761.0	.....	.....	65	18.3	94	SSW	.....	.....	3	.....	Fog	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	30.03	762.7	69	20.6	66	18.9	94	SW	15	6 7	.....	.....	10	.....	.....	.....	.....	.....	.....	Drizzling...	
Supply, Havre, France	29.76	755.9	63	17.2	63	17.2	78	SW	.....	.....	5–6	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Swatara, Boston, Mass.	30.06‡	763 5‡	.....	.....	61	16.1	88	SW	.....	.....	4	.....	5	.....	SW	.....	.....	.....	.....	Fair.....	
Trenton, N. 37° 04′, W. 9° 40′	30.12‡	765.0‡	.....	.....	73	22.8	76	ESE	.....	.....	0–1	.....	5	.....	N;W	0	0	Light	SW	Clear.....	
Tuscarora. N. 29° 24′, W. 115° 40′	29.69	754.1	65	18.3	65	18.3	89	NW	.....	.....	3	.....	2	.....	NW	0	0	Mod'ate	NW	Clear.....	
Vandalia. N. 37° 09′, W. 1° 32′	30.10‡	764.5‡	.....	.....	71	21.7	84	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.	.....	.....	.....	.....	61	16.1	82	SSW	9	4.0	.....	.....	5	.....	.....	0	0	.....	.....	Cloudy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35° 59′, W. 161° 48′		30.41*	772.4*	68	20.0	95	ESE			4		5		ESE		Small	ESE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T		29.67*	753.6*	54	12.2	74	SE			1		10			Blank			Wet	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 46° 40′, W. 50° 00′		30.05*	763.3*	51	10.6	100	SW			4					Light	Mod'ate	NNE	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 38° 02′, W. 123° 06′		29.88*	758.9*	59	15.0	76	NW			5		k		NW		Smooth	NW	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 34° 38′, E. 139° 10′		29.84	757.9	71	21.7	85	NNW			5		5		W		Smooth		D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana. N. 45° 50′ W. 54° 20′	.....	29.50*	756.9*	55	12.8	93	W	.....	.....	1	.....	5	.....	WNW	Light	Mod'ate	SW	Clearing,.....	Captain Sargent.
S. S. Ohio. N. 45° 57′ 15″, W. 42° 38′	.....	30.11	764.8	55	12.8	80	SW	.....	.....	3	.....	9?	.....	SW	Light	Small	NE	Clear?.....	Captain Morrison.
S. S. Pennsylvania	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Randle.
S. S. Switzerland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Jackson.
S. S. Vaderland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Richardson.
S. S. Hibernian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller. Laguayra, Venezuela	.....	29.88	758.9	87	30.6	72	Calm	0	0	.....	.....	5k	.....	E	0	Swell	NE	Clear.....	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, *nimbus*, *scud*, *fracto*, *pallio*, haze, *fog* and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 10, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador	.....	.....	30.10	764.6	74.3	23.5	74	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	Dr. Ollive.
Nemours	.....	.....	30.04	762.9	76.3	24.6	60	WNW	.....	.....	3	.....	0	.....	.....	0	0	Clear	Kesxuche.
Algiers	.....	.....	30.11	764.8	74.1	23.4	78	ENE	.....	.....	5	.....	2	.....	.....	0	0	Clear	Tourliere.
La Calle	.....	.....	30.11	764.7	77.0	25.0	59	E	.....	.....	5	.....	0	.....	.....	0	0	Fair	Foufrede.
Tunis	.....	.....	30.17	766.2	80.6	27.0	.....	NNE	.....	.....	7	.....	5	.....	.....	0.008	0.2	Clear.	Jacques.
Sfax	.....	.....	30.02	762.6	75.6	24.2	41	N	.....	.....	1	.....	3	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	30.08	764.1	77.9	25.5	43	N	.....	.....	5	.....	3	.....	.....	0	0	Pretty fair.	Herbin.
Tebessa	.....	.....	30.05	763.3	78.4	25.8	44	S	.....	.....	3	.....	2	.....	.....	0	0	Pretty fair.	Watrin.
Geriville	.....	.....	30.14	765.6	78.8	26.0	49	Calm	.....	.....	0	.....	0	.....	.....	0	0	Fair	Brugnlaux.
Laghouat	.....	.....	30.15	765.9	91.8	33.2	29	NNW	.....	.....	1	.....	1	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Very fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.43	747.5	29.97	761.2	65.7	18.7	69	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.18	741.2	29.93	760.1	66.6	19.2	70	ESE	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.11	739.5	29.97	761.3	63.9	17.7	56	S	.....	.....	3	.....	2cs	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.71	729.1	29.94	760.4	61.3	16.3	86	S	.....	.....	1	.....	0	.....	.....	0.008	0.20	.....	Andreas Rospini.
Hermannstadt	28.54	724.9	30.00	761.9	63.1	17.3	55	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.57	725.7	29.89	759.3	57.2	14.0	82	ENE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. Wagner
Lemberg	28.99	736.3	29.95	760.8	63.1	17.3	63	SE	.....	.....	1	.....	2	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.90	759.5	30.01	762.3	66.4	19.1	82	WNW	.....	.....	1	.....	1k	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.59	751.5	30.04	763.0	68.0	20.0	53	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.70	754.4	29.97	761.3	66.6	19.2	79	S	.....	.....	1	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.93	760.3	30.04	762.9	66.6	19.2	87	W	.....	.....	1	.....	1	.....	.....	0.079	2.0	Raining	P. Busin.
Vienna	29.19	741.4	29.88	759.0	68.0	20.0	62	SSE	.....	.....	2	.....	2	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give, occasionally, the weather by the Vienna symbols or in general terms, and it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.169	4.3	.....	Prof. M. Passau.
Brussels	29.36	745.8	29.56	750.7	61.3	16.3	72	SW	.....	.....	6	0	10	.....	SW	0.057	1.45	.....	Royal Observatory
Furnes	29.45	748.1	29.48	748.7	63.5	17.5	68	SW	.....	.....	7	.....	9	.....	.....	0.173	4.4	.....	M. E. de Cae.
Maeseyck	29.53	750.0	29.66	753.3	61.5	16.4	73	S	.....	.....	6	.....	9	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—In the originals, the weather is occasionally given by the Vienna symbols. Except for Brussels, the distinction between the upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

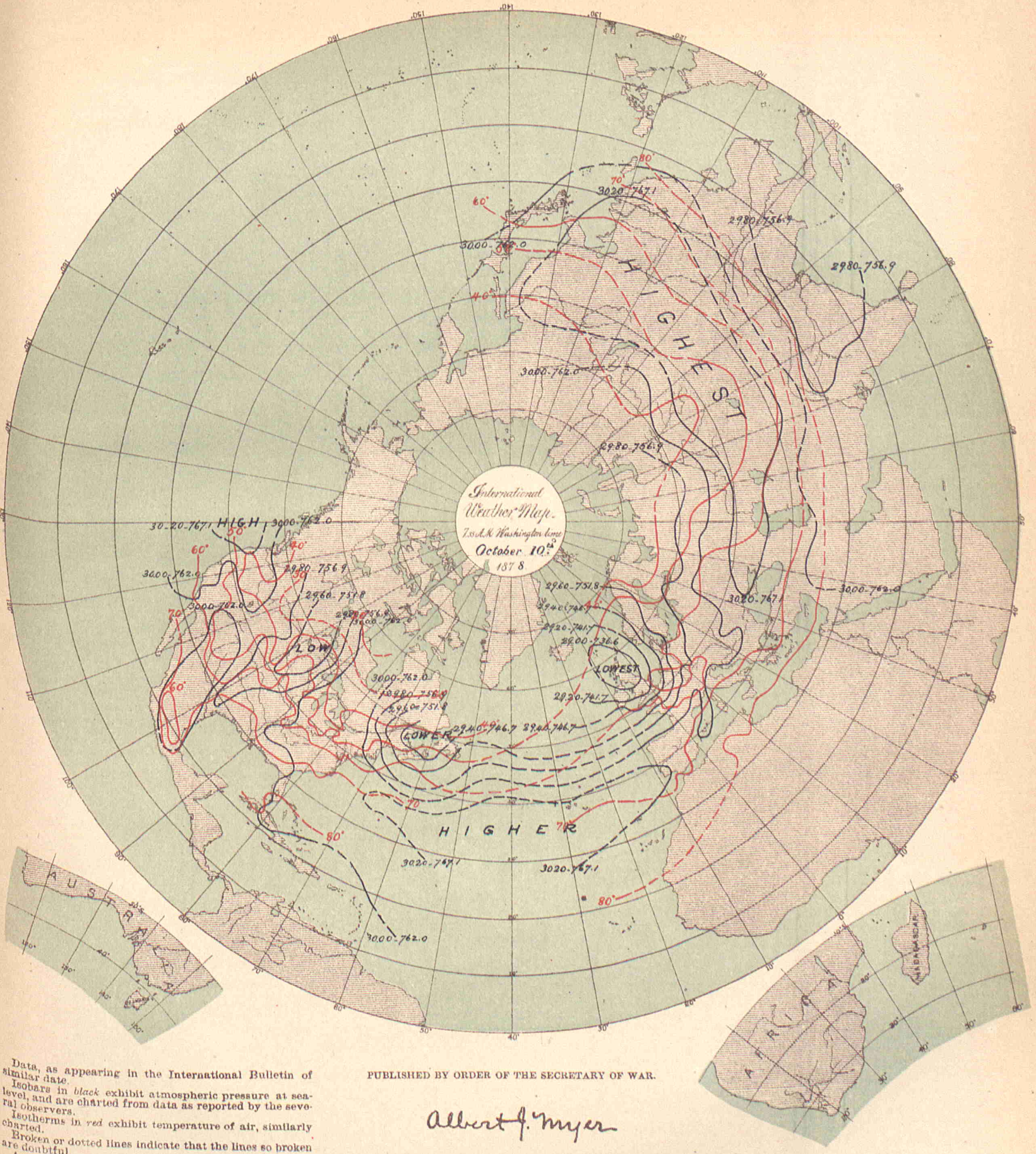
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.84	732.5	28.93	734.8	55.7	13.2	.....	SE	24	10.7	.....	.....	9	.....	.....	0.010	0.25	Squally.....	W. Boswell.
Ardrossan	28.69	728.7	28.70	729.0	58	14.4	.....	SW	.....	.....	4	.....	8	.....	.....	.....	.....	Raining.....	George Carrick.
Armagh, Observatory	.....	.....	28.99	736.3	55.0	12.8	.....	W	14	6.3	.....	.....	10	.....	.....	.....	.....	Gloomy.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.04	737.6	59.4	15.2	.....	WSW	36	16.1	.....	.....	9	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	28.65	727.7	29.04	737.6	58.0	14.4	.....	W	.....	.....	5	.....	10	.....	.....	0.22	5.6	Overcast....	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	83	28.3	.....	SE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.21	741.9	58.0	14.4	.....	S	.....	.....	4	.....	5	.....	.....	Blank	Blank	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	29.22	742.2	58.0	14.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Showery.....	John McLaren.
Chatham, School M. E.	29.19	741.4	29.32	744.7	57.2	14.0	.....	SW	.....	.....	4	.....	9	.....	.....	Blank	Blank	Overcast....	Lt. G. W. Morris, R. E.
Dartmoor	27.96	710.2	29.40	746.7	52.0	11.1	.....	W	.....	.....	7	.....	7	.....	.....	.....	.....	Squally.....	Alexander Watt.
Donaghadee	28.86	733.0	28.89	733.8	57	13.9	.....	WSW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.35	745.5	29.38	746.2	60	15.6	.....	SW	.....	.....	6	.....	8	.....	.....	.....	.....	Showery.....	J. Costello.
Falmouth, Observatory	29.24	742.7	29.46	748.3	58.1	14.5	.....	W	.....	.....	6	.....	7	.....	.....	.....	.....	Squally.....	The Staff.
Fort Napier, (Natal)	27.50	698.5	29.82	757.4	75.0	23.9	.....	E	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.67	753.6	29.90	759.4	85.5	29.7	.....	Calm?	.....	.....	2?	.....	4	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	29.16	740.7	54	12.2	.....	WNW	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8	.....	.....	.....	NW	.....	.....	2	.....	0	.....	.....	.....	.....	Overcast?...	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	28.54	724.9	28.75	730.2	57.9	14.4	.....	SE	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	D. G. Maclean.
Great Yarmouth	29.23	743.2	29.27	743.2	62	16.7	.....	S	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds....	G. T. Watson.
Greenwich, Royal Obs'y	29.13	739.9	29.30	744.2	59.0	15.0	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining.....	The Staff, for G. B. Airy.
Guernsey	29.29	744.0	29.51	749.5	60	15.6	.....	WSW	.....	.....	6	.....	8	.....	.....	.....	.....	Squally.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.54	750.3	60	15.6	.....	W	.....	.....	4	.....	3k	.....	.....	0.44	11.2	Squally.....	M. P. Moyle.
Holyhead	29.06	738.1	29.12	739.6	59	15.0	.....	W	.....	.....	6	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.26	743.2	29.54	750.3	60.1	15.6	.....	WSW	.....	.....	8	.....	8	.....	.....	Blank	Blank	Threatening	J. Fisher.
Kew, Observatory	29.26	743.2	29.30	744.2	58.1	14.5	.....	SW	20	8.9	.....	.....	10	.....	.....	.....	.....	Raining.....	The Staff.
Kingstown	29.06	738.1	29.09	738.9	57	13.9	.....	W	.....	.....	6	.....	7	.....	.....	Blank	Blank	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.14	740.1	56.8	13.8	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.96	761.0	30.04	763.0	82	27.8	.....	SW	.....	.....	2	.....	3c	.....	.....	.....	.....	Blue sky....	Sergt. Beckett.
Nairn	28.76	730.5	28.85	732.8	61	16.1	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Hazy	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.02	762.5	80.8	27.1	.....	SE	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	28.90	734.0	29.08	738.6	58.1	14.5	.....	SW	.....	.....	4	.....	10;d	.....	SW	0.062	1.67	Raining.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.63	727.2	29.14	740.1	57.1	13.9	.....	SW	.....	.....	6	.....	9	.....	.....	Blank	Blank	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.25	742.9	56	13.3	.....	S	.....	.....	3	.....	10	.....	.....	.....	.....	Squally.....	H. E. Bellamy.
Plymouth	29.33	745.0	29.41	747.0	59.8	15.4	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Squally.....	John Merrifield.
Roche's Point	29.29	744.0	29.33	745.0	56	13.3	.....	WNW	.....	.....	6	.....	5	.....	.....	.....	.....	½ clouded..	W. Kennedy.
Saint Ann's Head	29.07	738.4	29.23	742.4	59	15.0	.....	W	.....	.....	8	.....	10	.....	.....	.....	.....	Overcast....	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	28.95	735.3	55.2	12.9	.....	SE	23	10.3	.....	.....	10	.....	.....	.....	.....	Misty.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.06	763.5	70.2	21.2	.....	NE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	28.81	731.8	29.08	738.6	58.7	14.8	.....	SW	.....	.....	6	.....	10	.....	.....	0.23	5.8	Showery.....	W. F. Cooper.
Silloth, Rectory	28.84	732.5	28.87	733.3	57.2	14.0	92	SW	.....	.....	6	.....	10	.....	.....	0.060	1.52	Overcast.....	C. Edith Redford.
Stonyhurst, Observatory	28.63	727.2	29.04	737.6	56.4	13.6	.....	SW	.....	.....	5	.....	10	.....	.....	.....	.....	Drizzling....	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.07	738.4	29.28	743.7	56.3	13.6	.....	SW	.....	.....	3	.....	10	.....	.....	.....	.....	Raining.....	Rev. C. H. Griffith, F. M. S.
Thurso	28.86	733.0	28.92	734.6	58	14.4	.....	SE	.....	.....	3	.....	8	.....	.....	.....	.....	Misty.....	John Trotter.
Truro, Royal Institution	.....	.....	29.58	751.3	61	16.1	.....	W	.....	.....	8	.....	7	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	29.41	747.0	29.44	747.8	53.7	12.1	.....	WNW	36	16.1	.....	.....	7	.....	.....	Blank	Blank	Squally.....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	28.44	722.4	50.0	10.0	82	SE	.....	.....	3	.....	10km	.....	.....	0.01	0.3	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.8	73.8	23.2	56	E	11.5	5.1	.....	0	0	.....	.....	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.09	738.9	29.18	741.2	47.9	8.8	68	W	33	14.8	.....	.....	10	.....	.....	0.68	2.0	Showery.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 41° 25′, W. 62° 35′	.....	.....	29.66	753.4	64	17.8	.....	WNW	.....	.....	8	.....	7	.....	.....	8	.....	Raining	Capt. Alex. Wilson.
Barque Commewyne N. 7° 30′, W. 55° 25′	.....	.....	29.96	761.0	85	29.4	.....	E	.....	.....	4	.....	4	.....	.....	2	E	D. clouds.....	Capt. A. Buchan. Capt. W. Waring.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Confused.	.....	
Barque Margaret Smith, N. 20° 5′, W. 63° 5′	.....	.....	30.00	762.0	85	29.4	.....	.....	.....	.....	3	.....	5	.....	.....	.....	.....	Squally.....	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity Miles per hour.	Wind. Velocity Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.28	667.5	30.00	762.0	67.1	19.5	92	NE			1	2c	6s;haze			1.2	30.5		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.63	752.6	29.68	753.8	59.4	15.2	76	SSE			4		4						
Fanöe	29.51	749.5	29.53	750.0	54.9	12.7	95	S			4		10						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.95	735.2	28.98	736.1	52.0	11.1	99	S			4		10						Rain & fog
Vestervig	29.27	743.5	29.44	747.8	53.6	12.0	100	SE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.13	739.8	29.68	753.8	59.7	15.4	82	SW			4		5		E	0.319	8.1	Cloudy	Collignon, Director.
Amiens, Normal School	29.54	750.2	29.64	752.9	64.8	18.2	69	SE					5		NE	0	0	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.93	760.2	30.01	762.2	61.7	16.5	98	E			1		10					Heavy rain	M. Giraud, Director.
Bar-sur-Seine	29.27	743.4	29.82	757.4	58.8	14.9	78	S			3		8kn		SW	0.234	6.0	Very cloudy	C. Saillard.
Beaumette Obs'y (Angers)																			Albert Cheux.
Beauvais, Normal School	29.38	746.2	29.66	753.3	64.0	17.8	63	SW			4		8		WSW	0.04	1.	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.09	738.9	29.98	761.4	59.5	15.3	66	S			2		10		SW	0.004	0.1	Covered	Normal School.
Bourg-en-Bresse, N. School	29.15	740.4	30.07	763.8	59.2	15.1	87	SSE			1		10n		S			Raining	M. Marlot, Director.
Bourges, Normal School	29.33	744.9	29.87	758.8	57.2	14.0	78	SW			4		10k		SW	0.110	2.8	Covered	A. Wagner, Director.
Brest, Naval Observatory	29.41	747.0	29.65	753.2	64.0	17.8	72	W			6		5		W	0.335	8.50	Squally	The Staff.
Carcassonne, Normal School	29.65	753.0	30.00	762.4	65.5	18.6	62	NW			1		5	W	W	0	0	Cloudy	Septembre, Director.
Caen	29.48	748.9	29.56	750.7	62.6	17	68	SW			4		8		SW	0	0	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.08	738.5	29.63	752.7	57.9	14.4	89	SSW			6		10			0.059	1.5	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.42	747.3	29.74	755.3	59.9	15.5	76	SW			6		5k		SW	0.316	8.0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.56	725.5	29.89	759.2	62.1	16.7	49	SW			4		8		SW	0.031	0.8	Very cloudy	Alluard, Director.
Commercy, Normal School	28.96	735.5	29.78	756.5	59.0	15	87	SW			4		ck		SW	0	0		Dr. Coulet, Director.
Commune de Gréasque*	28.91	734.3	30.05	763.3	64.6	18.1	79	SE			1		10	SE				Raining	M. Kina.
Grenoble, Normal School	29.19	741.3	29.95	760.7	57.6	14.2	84	WNW			3		10n		SSW	0	0	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Moullot, Director.
Le Mans, Normal School	29.40	746.7	29.70	754.4	57.6	14.2	84	SW			4		8		SW	0.04	1.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.2	29.97	761.1	60.1	15.6	62	S			3		8		S	0.024	0.60	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	29.62	752.4	29.72	754.9	62.6	17.0	81	WSW			10				W	0.059	1.5		T. Carré, Director.
Mâcon, Normal School	29.08	761.5	30.01	762.3	60.8	16	89	SSW			3		10			0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.87	733.2	29.90	759.4	54.7	12.6	83	S			1		10kn		N	0.20	5.	Covered	M. Barbier, Director.
Nismes, Normal School	29.84	757.9	30.04	763.0	67.3	19.6	51	N			1		2		N	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.98	736.0	30.03	762.7	60.8	16	85	S			1		8	NE	S	0	0	Very cloudy	M. Cantier.
Puy de Dome (Summit)	25.00	634.9			40.3	4.6	100	W			6		Fog			0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.90	759.4	29.93	760.2	63.7	17.6	79	SW			4		5	W	W	0	0	⅘ covered	Lt. Decante, Director.
Rouen, Normal School	29.49	749.1	29.58	751.3	63.3	17.4	62	S			5		5		S	0.020	0.5	Cloudy	F. Lucard, Director.
Saint Malo (Port)			29.61	752.2	61.0	16.1	67	WSW			6		5		WSW	0.119	3.02	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.63	750.0	29.69	754.2	64.2	17.9	63	SW			4		6			0.193	4.9	Raining	E. Renou.
Tarbes, Normal School	29.01	736.9	30.08	764.0	60.8	16	89	WSW			1		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.28	743.6	29.98	761.4	65.3	18.5	71	SE			1		8		S	0	0	Very cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchési.
Lyons, Observatory			29.99	761.7									4			0.020	0.5		
Marseilles, Observatory			29.97	761.2	68.0	20.0	79	SSE			1		10			0.031	0.8	Very cloudy	The Staff.
Mont-Louis	24.87	631.7	30.19	766.8	54.9	12.7	48	NW			2		3		SW	0	0		M. Cave.
Nice			30.04	763.0	68.0	20.0	87	SW			2		10			0	0	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.39	746.5	29.97	753.5	63.9	17.7	63	SW			6		6		SW	0.028	0.7		Marié Davy, Director
Perpignan			30.02	762.4	70.2	21.2	59	NE	11.2	5.00			2		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.56	573.1			41.4	5.2		SW			2		10			0	0	Cloudy	Gen'l de Nansouty
Toulouse, Observatory	29.40	746.8	30.18	765.2	59.0	15.0	90	NW			1		10			0.037	0.95	Raining	The Staff.
Tours	29.60	751.7	29.79	756.7	60.1	15.6	89	W			3		7		W	0.106	2.7		C. Marguet.
Versailles			29.69	754.0	63.0	17.2	52	W			6		10			0.032	0.79	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.6	30.21	767.2	65.7	18.7	98	NE	7.6	3.4			10n			0.319	8.1	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.97	735.8	29.80	757.0	60.8	16.0	69	S			3		6	S		0	0		Prof. Dr. Hoh.
Berlin	29.63	752.5	29 80	756.8	66.4	19.1	58	S			1		4			0.031	0.8		Prof. Arndt.
Breslau	29.39	746.5	29.92	759.9	66.7	19.3	60	SSW			4		6			0	0		Royal University Obs'y
Carlsruhe	29.43	747.5	29.85	758.1	59.5	15.3	82	S			2		9			0.240	6.1		Albert Senz.
Cassel	29.15	740.4	29.75	755.7	59.4	15.2	80	SSE			2		5	SSW		0.048	1.22		Dr. H. Möhl.
Crefeld	29.48	748.7	29.64	752.8	63.5	17.5	59	S			6		8			0.08	2.		Director Lose.
Emden	29.57	751.1	29.61	752.0	57.6	14.2	94	S			3		5	SW		0.087	2.2		Prof. Prestel.
Frankfort on the Main	29.48	748.7	29.84	757.9	59.9	15.5		SSW			2		8			0.016	0.4		Physical Society.
Friedrichshafen	28.52	724.3	29.94	760.4	57.6	14.2	83	S			2		7	WSW		0.075	1.9		M. Wilhelm.
Hamburg	29.60	751.9	29.67	753.7	59.0	15.0	84	SW			5		9ks;s			0	0	Squally	Captain F. Hegemann.
Kiel	29.64	752.8	29.65	753.2	57.6	14.2	83	SSW			3		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.77	756.2	29.85	758.3	64.6	18.1	71	SW			2		0			0	0		Prof. E. Luther.
Köslin			29.77	756.2	59.9	15.5		S			2		4			0	0		H. Müller.
Leipsic, Observatory	29.41	747.0	29.82	757.4	65.8	18.8	57	SSW			4		4	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.82	757.3	29.86	758.5	58.6	14.8	86	SSW			1		9ks					Foggy	Reinbrecht and Skalweit.
Neufahrwasser	29 84	758.0	29.86	758.4	63.3	17.4	77	SSW			3		8			0	0	Dust-haze	A. Lothes.
Posen	29.62	752.4	29.91	759.6	64.9	18.3	63	WSW			5		9			0	0		Dr. Magener.
Strassburg (in Alsace)	29.36	745.7	29.90	759.4	60.8	16.0	83	S			3		9	SW		0.003	0.07		Astronomical Observatory.
Stuttgart	28.93	734.7	29.85	758.2	60.8	16.0	62	W			2		9	W		0.031	0.8		Prof. Schoder.
Treves, (Trier)	29.22	742.2	29.74	755.3	60.4	15.8	72	SW			8		8			0.177	4.50		Prof. Flesch.
Weissenburg, (Bavaria)	28.40	721.4	29.88	758.9	59.2	15.1	71	SSW	2.9	1.3			4ck		W	0.094	2.4		Dr. Von Bebber.
Wustrow, Naval School	29.68	753.9	29.71	754.5	63.0	17.2	64	S			4		5k			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.72	754.8	30.10	764.4	74.1	23.4		SW			1.0							Smoky	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.42	747.2	29.89	759.1	89.1	31.7	48	Calm					0			0	0	Blue sky	
Bombay	29.79	756.6	29.82	757.5	85.9	29.9	83	NNW	19	8.5			0			0	0	Blue sky	
Poona	27.89	708.5	29.88	759.0	83.4	28.6	49	NW					4		NW	0	0	D. clouds	
Lahore	29.03	737.3	29.76	755.8	88.1	31.2	37	W	0.6	0.3						0	0	Blue sky	
Belgaum	27.32	693.9	29.84	757.8	79.9	26.6	57	NE	6	2.7			2		NE	0	0	D. clouds	
Roorkee	28.88	733.5	29.77	756.2	80.8	27.1	59	Calm	2	0.9						0	0		
Agra	29.22	742.2	29.77	756.2	89.7	32.1	38	W								0	0		
Nagpur	28.75	730.2	29.78	756.4	85.6	29.8	62	Calm	3.5	1.6			4		E	0	0	D. clouds	
Lucknow	29.38	746.2	29.75	755.6	84.3	29.1	48	Calm	0.8	0.4						0	0	Blue sky	
Allahabad	29.44	747.7	29.75	755.6	81.1	27.3	58	Calm	1.3	0.6			0			0	0	Blue sky	
Patna	29.55	750.5	29.73	755.1	85.2	29.6	67	Calm	0.4	0.2			0			0	0	Blue sky	
Hazaribagh	27.75	704.9	29.76	755.9	78.8	26.0	54	NW	5.2	2.3			0			0	0	Blue sky	
Cuttack	29.67	753.6	29.75	755.7	85.0	29.4	50	Calm	0.9	0.4						0	0	Blue sky	
Calcutta (Alipore)	29.72	754.8	29.74	755.3	83.2	28.4	83	W	2.0	0.9			4			0	0	D. clouds	
Goalpara	29.33	745.0	29.72	754.9	78.5	25.8	82	SSW	1.0	0.4			0			0	0	Blue sky	
Chittagong	29.69	754.2	29.79	756.6	79.4	26.3	91	Calm	0.7	0.3			10			0	0	Overcast	
Sibsagar	29.41	747.0	29.75	755.5	81.6	27.6	85	NE	2.2	1.0			10	SW	SW	0	0	D. clouds	
Jubbulpore	28.44	722.2	29.78	756.4	87.0	30.6	49	Calm	1.2	0.5			4			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Udine	29.63	752.5	30.03	762.8	65.5	18.6	69	SW	1.8	0.8	.....	.....	8	.....	.....	0 094	2.4	.....	Prof. Giovanni Clodig.
Padua	29.91	759.7	30.02	762.5	66.7	19.3	70	SW	0.7	0.3	.....	.....	4	SW	.....	0.076	1.9	.....	Prof. Dott. Lorenzoni
Vicenza	29.82	757.4	30.01	762.2	67.6	19.8	62	SW	1.8	0.8	.....	.....	3	W	.....	0.130	3.3	.....	Cont. Alm. Da Schio.
Bergamo	28.69	728.7	30.00	761.9	57.9	14.4	62	S	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.49	749.0	30.00	762.0	65.5	18.6	76	SSW	.....	.....	2	.....	7	WSW	.....	0.209	5.3	.....	Prof. Schiaparelli.
Moncalieri	29.10	739.2	30.00	762.0	61.9	16.6	87	SW	1.8	0.8	.....	.....	4	NE	.....	0.020	0.5	.....	Prof. P. F. Denza.
Mondovi	28.10	713.6	29.99	761.7	61.2	16.2	72	WNW	.....	.....	2	.....	6	SE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.80	756.9	30.02	762.5	68.4	20.2	70	SW	.....	.....	6	.....	8	SW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.87	758.6	30.03	762.8	68.4	20.2	68	SW	8.7	3.9	.....	.....	10	SW	.....	0.028	0.7	.....	Prof. G. M. Garibaldi.
Parma	29.71	754.5	30.02	762.4	66.2	19.0	72	NW	.....	.....	4	.....	3	.....	.....	0.031	0.8	.....	Prof. P. Pigorini.
Florence	29.82	757.4	30.08	763.9	68.9	20.5	62	SW	.....	.....	2	.....	7	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.94	760.5	30.02	762.6	69.8	21.0	61	W	13 0	5.8	.....	.....	3	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Luigi Guidi.
Urbino	28.54	724.8	30.08	763.9	60.1	15.6	69	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.94	760.5	30.11	764.9	72.0	22.2	60	WSW	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.91	759.6	30.10	764.6	73.9	23.3	40	W	.....	.....	2	.....	4	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.83	757.6	30.08	764.0	70.7	21.5	79	SSW	1.8	0.8	.....	.....	2	.....	.....	0.697	17.7	.....	Prof. C. De Giorgi.
Cagliari	29.88	758.9	30.07	763.7	73.9	23.3	56	W	.....	.....	2	.....	2	S	.....	0	0	.....	Prof. A. Palmotti.
Cosenza	29.21	742.0	30.09	764.2	73.0	22.8	73	SW	3.8	1.7	.....	.....	2	.....	.....	0.224	5.7	.....	Prof. F. D. Corti.
Palermo	29.85	758.3	30.11	764.7	71.1	21.7	61	NE	3.1	1.4	.....	.....	1	.....	.....	0.276	7.0	.....	Prof. G. Cacciatore.
Syracuse	30.02	762.6	30.10	764.5	73.2	22.9	74	E	7.4	3.3	.....	.....	7	WSW	.....	0.068	1.6	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.87	758.7	30.06	763.5	67.0	19.4	79	NNW	4.5	2.0	.....	.....	9ck;c	WNW	.....	0	0	Fair	.....
Tokei (Yeddo) Observatory	29.84	757.9	29.90	759.4	61.1	16.2	95	NE	3.0	1.3	.....	.....	7ck;s	.....	.....	0.015	0.38	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.8	18.8	93	S	.....	.....	1	10cs	0	N	.....	0.118	3.0	Very cloudy	P. Ceballos.
Guadalajara	25.05	636.2	30.03	762.6	55.0	12.8	76	W	.....	.....	1	8	.....	.....	.....	0	0	Cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.41	620.1	29.94	760.6	63.9	17.7	88	W	.....	.....	1	5c	3k	E	E	0.007	0.18	Misty	Prof. M. Leal.
Mexico	23.13	587.4	30.07	763.7	58.5	14.7	88	NW	1.1	0.5	.....	8c	7k	.....	.....	1.60	40.5	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	64.4	18.0	91	Calm	.....	.....	0	0	10k	.....	.....	0	0	Covered	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpam	29.80	758.3	29.87	758.6	77.9	25.5	93	SW	.....	.....	1	0	10	.....	S	Inap.	Inap.	Covered	M, M. Cházaro.
San Luis Potosi	24.23	614.6	30.14	765.6	63.0	17.2	80	SE	.....	.....	.....	.....	8	.....	SE	0	0	Misty	G. Barroeta, M. D.
Vera-Cruz	29.94	760 4	29.97	761.1	78.8	26.0	84	Calm	0	0	.....	.....	4sk	.....	SE	0	0	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.31	592.2	30.08	764.0	54.3	12.4	91	E.	0.9	0.4	.....	4	0	Calm	.....	0.591	15.00	.....	Prof. P. Spina.
Durango	24.24	615.8	30.04	763.0	63.8	17.7	88	Calm	.....	.....	0	0	4k	.....	S	0	0	½ cloudy	M. V. de Leon, C. E.
Colima	28.30	720.2	30.00	762.0	74.8	23.8	80	E	.....	.....	.....	0	3	.....	E	0.634	16.6	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.48	748.9	29.48	748.9	62.2	16.8	.....	S	.....	.....	5	.....	.....	.....	.....	0.031	0.8	.....	
Groningen	29.49	749.0	29.54	750.4	59.7	15.4	.....	S	.....	.....	5	.....	.....	.....	.....	0.122	3.1	.....	
Helder	29.43	747.5	29.43	747.5	61.0	16.1	.....	S	.....	.....	5	.....	.....	.....	.....	0.122	3.1	.....	
Hellevoetsluis	29.49	749.0	29.49	749.0	62.4	16.9	83	S	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.49	749.1	29.54	750.3	61.0	16.1	76	SSW	.....	.....	5	.....	8	.....	.....	0.098	2.5	Very cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer
Bergen	29.33	745.0	29.39	746.4	54.7	12.6	93	SSE	11.2	5.0	.....	.....	8	.....	.....	0.315	8.0	Raining	
Brönö	29.47	748 4	29.50	749.4	55 8	13.2	73	Calm	0	0	.....	.....	6	.....	.....	0	0	.....	
Christiania	29.46	748.2	29.60	751.8	57.4	14.1	86	SE	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.60	751.8	29.64	752.9	40.3	4.6	65	SSW	9	4	.....	.....	7	.....	.....	0	0	....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of A. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.06	763.4	30.24	768.2	65.1	18.4	88	SW	7.4	3.3	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.17	740.8	30.17	766.4	69.4	20.8	38	NW	7.4	3.3	.....	.....	3	.....	.....	0	0	Solar corona	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.10	764.5	30.19	766.7	75.4	24.1	61	SW	9.8	4.4	.....	.....	4	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.86	758.5	30.22	767.5	66.6	19.2	48	NNE	14.0	6.1	.....	.....	7	W	.....	0.004	0.1	.....	The Staff.
Ponta Delgada, (Azores)	30.24	768.1	30.31	769.9	69.8	21.0	58	ESE	.....	.....	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48', E. 13° 08'	.....	.....	30.00	762.0	80.2	26.8	.....	W	.....	.....	3	.....	9	.....	W	.....	.....	Drizzling	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	.....	.....	29.91	759.6	82.4	28.0	.....	NNE	.....	.....	.....	.....	8	.....	NE	3	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
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Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the cooperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342.2 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 41° 34'.

SPANISH SERIES.

Furnished by the cooperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.90	759.5	30.00	762.1	77.9	25	33	WSW	4.5	2.03	.....	1c	.....	.....	.....	0	0	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	30.03	762.8	30.09	764.2	72.5	22.5	53	NW	3.4	1.53	.....	3	3	SW	.....	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.20	690.9	.....	.....	58.0	14.8	70	SW	12.4	5.55	.....	.....	8	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.91	708.9	30.10	764.4	67.8	19.9	44	NW	10.4	4.60	.....	2	1	WSW	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.93	760.2	30.08	763.9	83.1	28.4	33	NE	3.3	1.47	.....	.....	.....	.....	.....	0	0	Clear.	Diayo Diuz, Director.
Santiago, Met. Obs'y	29.22	742.2	30.11	764.7	63.1	17.3	70	WNW	13.7	6.11	.....	.....	8	.....	.....	0.469	11.9	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.00	762.0	78.8	26.0	87	ESE	1.3	0.6	.....	2c	0	NW	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	763.1	30.14	765.6	77.2	25.1	39	NNW	13.4	6.0	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.86	758.4	29.95	760 7	79.9	26.6	92	S	0	0	.....	3s	2k	S	S	0	0	Clear	Leonardo de Toleda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 856 meters, or 2,821.4 feet; Madrid 656.5 m., or 2,159.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.69	754.0	29.72	755.0	38.1	3.4	.....	NW	.....	.....	2	.....	10	.....	.....	0.63	16.	.....	
Umea	29.64	752.8	29.69	754.1	43.2	6.2	97	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.59	751.6	29.64	752.9	55.4	13.0	82	ENE	.....	.....	4	.....	2	.....	.....	0.154	3.9	Raining	
Stockholm	29.59	751.6	29.77	756.1	54.3	12.4	98	Calm	.....	.....	0	.....	9	.....	.....	0.004	0.1	Foggy	
Wisby	29.72	754.8	29.78	756.3	54.7	12.6	93	WSW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.67	753.5	29.74	755.4	53.6	12.0	92	SSW	.....	.....	.....	.....	10	.....	.....	0.024	0.62	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.9	30.00	762.1	54.3	12.4	93	S	.....	.....	3	.....	10	.....	.....	0.008	0.2	Raining	The Observatory.
Zurich	28.35	720.0	29.97	761.2	50.0	15.0	72	W	.....	.....	4	.....	7	.....	.....	0.205	5.2	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm.; Thermometer, —1.6 cent.; Relative Humidity, +23 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.13	765.3	66.6	19.2	69	ENE	9	4.0	.....	.....	1	.....	ESE	0	0	.....	The Observatory.
Valona	.....	.....	30.15	765.8	70.7	21.5	.....	SW	.....	.....	3	.....	2	.....	.....	0.20	5.	Raining	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.03	762.8	79.7	26.5	51	NW	.....	.....	1	.....	1k	.....	SE	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.68	753.9	29.99	761.7	44	6.7	.....	W	6	2.7	.....	0	2s	.....	W	0.23	5.8	Clear	W. R. Bigg.
*Chatham, N. B	29.28	743.7	29.94	745.2	47	8.3	89	SW	2	0.9	.....	.....	10n	.....	SW	0.73	18.5	Light rain	G. A. Blair.
Charlottetown, P. E. Island	29.33	745.0	29.38	746.2	53	11.7	84	W	8	3.6	.....	.....	10n	.....	Calm	0.310	7.87	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.70	754 4	29.90	759.4	46.1	7.8	70	NW	.....	.....	5	.....	10s	.....	.....	0.214	5.43	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.14	740 1	29.30	744.2	45	7.2	93	W	.....	.....	2	.....	.....	.....	.....	0.76	19.3	Overcast	H. A. Johnson.
Esquimault, B. C	29.83	757.7	29.87	758.7	47.3	8.5	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.58	14.7	Overcast	W. H. Bevis.
*Father Point, Quebec	29.37	746.0	29.40	746.7	41	5.0	96	N	48	21.5	.....	.....	10n	.....	NE	1.20	30.5	Light rain	J. McWilliams.
Fredericton, N. B	29.35	745.5	29.41	747.0	49.0	9.4	62	W	15	6.7	.....	.....	10s	.....	W	0	0	Overcast	Prof. Harrison.
*Fort Garry, Manitoba	28.62	726.9	29.43	747.5	46	7.8	77	SE	16	7.2	.....	5k	5n	S	S	0	0	Cloudy	James Stewart.
Granton, Ontario	29.05	737.9	30.17	766.3	42	5.6	91	N	.....	.....	1	0	0	.....	.....	0.06	1.5	Clear	James Grant.
*Halifax, N. S	29.32	744.7	29.45	748.0	54	12.2	77	W	12	5.4	.....	0	0	.....	.....	0.210	5.33	Clear	F. Allison, M. A.
Hamilton, Ontario	29.81	757.2	30.19	766.8	44.1	6.7	79	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.70	754.4	29.72	754.9	47	8.3	92	SW	.....	.....	1	.....	10	.....	.....	0.58	14.7	Raining	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.05	763.3	44	6.7	78	NW	13	5.8	.....	0	0	.....	.....	0.12	3.0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.32	744.7	29.36	745.7	59.0	15.0	88	SW	12	5.4	.....	6ck	0	SW	.....	0.43	10.9	Fair	C. H. Rigby.
*Montreal, Quebec	29.59	751.6	29.79	756.7	47	8.3	74	W	25	11.2	.....	5k	2ks	NW	.....	0.30	7.6	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.43	747.5	30.14	765.5	41	5.0	82	W	11	4.9	.....	0	0	.....	.....	0.15	3.8	Clear	Rev. R. Mosley.
Peterboro, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.17	766.3	40	4.4	91	Calm	0	0	.....	0	0	.....	.....	0.04	1.0	Clear	H. Morgan.
Port Hastings, N. S	29.35	745 5	29.40	746.7	57.6	14.2	.....	NW	5	2.2	.....	.....	.....	.....	.....	0.50	12.7	Fine	Peter Grant.
Port Stanley, Ontario	29.51	749 5	30.17	766.3	41	5.0	82	N	4	1.8	.....	2c	0	SW	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.25	742.9	29.67	751.1	42	5.6	91	W	.....	.....	5	2ks	2ks	.....	W	0.75	19.1	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.58	751.3	30.05	763.3	43	6.1	83	NW	6	2.7	.....	.....	8s	.....	NW	0.26	6.6	Cloudy	W. H. McIntyre.
St. Andrews, N. B	29.41	747.0	29.48	748.3	51	10.6	68	NW	10	4.5	.....	2k	5ks	W	.....	0.20	5.1	Fair	Dr. Gove.
St. John, N. B	29.29	744.0	29.45	748.0	50	10.0	71	SW	17	7.6	.....	.....	10ks	.....	.....	0.01	0.3	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.43	747.5	30.15	765.8	48	8.9	61	NW	10	4.5	.....	5k	0	W	.....	0.04	1.0	Fair	K. Stewart.
Stayner, Ontario	29.35	745 5	30.14	765.5	45	7.2	80	NW	8	3.6	.....	.....	10n	.....	W	0.06	1.5	Threatening	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.17	766.3	38.4	3.6	97	NW	8.0	1.3	.....	0	.....	.....	.....	0.127	3.23	Clear	C. J. MacGregor, M. A
*Sydney, C. B	29.35	745.5	29.38	746.2	58	14.4	89	SW	18	8.0	.....	8k	2ks	SW	SW	0.32	8.1	Clearing	T. C. Hill.
*Toronto, Ontario	29.75	755 6	30.14	765.5	45	7.2	74	W	4	1.8	.....	2ck	0	N	.....	0.04	1.0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48	8.9	100	SE	.....	.....	.....	5s	5n	.....	.....	1.22	31.0	Rainy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,162 ft., or 360.8 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.70	754.4	29.93	760.2	49	9.4	64	W	25	11.2	.....	1k	0	W	.....	0.06	1.5	Clear	
Alpena, Michigan	29.51	749.5	30.17	766.3	39	3.9	81	NW	1	0.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Atlanta, Georgia	28.90	734.0	30.02	762.5	63	17.2	94	NE	8	3.6	.....	.....	10n	.....	E	0.03	0.8	Light rain	
Atlantic City, New Jersey	30.03	762.7	30.04	763.0	58	14.4	69	NW	10	4.5	.....	2c	0	Calm	.....	0	0	Clear	
Augusta, Georgia	29.90	759.4	30.08	764.0	70	21.1	90	Calm	0	0	.....	.....	10s;sm'	.....	SE	0	0	Cloudy	
Baltimore, Maryland	30.04	763.0	30.09	764.3	60	15.6	55	NW	9	4.0	.....	2c	2s	NW	NW	0	0	Fair	
Barnegat, New Jersey	30.03	762.7	30.05	763.3	55	12.8	62	NW	23	10.3	.....	5c	0	NW	.....	0.11	2.8	Fair	
Bismarck, Dakota	27.62	701.5	29.47	748 5	45	7.2	76	NW	23	10.3	.....	10cs	Sm'e	NW	.....	0	0	Cloudy	
Boerne, Texas	28.51	724.1	.....	.....	70	21.1	85	S	3	1.3	.....	5k	0	S	.....	0	0	Clearing	
Boise City, Idaho	27.27	692.6	30.33	767.8	36	2.2	80	SE	4	1.8	.....	5k	0	Calm	.....	Inap.	Inap.	Fair	
Boston, Massachusetts	29.66	753.4	29.81	757.2	53	11.7	61	W	27	12.1	.....	8cs;k	1s	Calm;W	Calm	0.32	8.1	Fair	
Brackettville, Texas	28.79	731.3	29.79	756.7	70	21.1	90	E	3	1.3	.....	0	Fog	.....	.....	0	0	Foggy	
Breckenridge, Minnesota	28.43	722.1	29.38	746.2	51	10.6	79	SE	36	16.1	.....	5c	2ks	W	S	0	0	Cloudy	
Brownsville, Texas	29.87	758.7	29.93	760.2	74	23.3	90	Calm	0	0	.....	8cs	0	W	.....	0	0	Fair	
Buffalo, New York	29.42	747.3	30.13	765 3	45	7.2	76	W	8	3.6	.....	1c	0	W	.....	0.18	4.6	Clear	
Burkes, Arizona	.....	.....	.....	.....	64	17.8	Inap.	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.63	752.6	29.89	759.2	50	10.0	58	W	16	7.2	.....	0	2ks	.....	W	0.38	9.7	Fair	
Cairo, Illinois	29.59	751.6	29.97	761.2	67	19.4	89	E	4	1.8	.....	.....	10s	.....	E	0.01	0.3	Cloudy	
Camp Apache, Arizona	.....	.....	.....	.....	42	5 6	49	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	64	17.8	34	W	.....	.....	2	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.81	681.0	30.29	769.4	48	8.9	36	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.47	697.7	30.04	763.0	40	4.4	71	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolin	30.08	764.0	30.09	764.3	72	22.2	85	SW	4	1.8	.....	2c	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.03	762.7	30.06	763.5	67	19.4	84	SW	4	1.8	.....	2cs	0	SE	.....	0	0	Fair	
Cape Lookout, N. Carolin	30.08	764.0	30.09	764.3	73	22.8	90	NW	4	1.8	.....	.....	10ks	.....	SW	0	0	Cloudy	
Cape May, New Jersey	30.04	763.0	30.07	763.8	61	16.1	61	N	27	12.1	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.15	740.4	29.83	757.7	73	22.8	95	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Charleston, South Carolin	30.05	763.3	30.11	764.8	73	22.8	90	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cheyenne, Wyoming	23.81	604.8	29.75	755.6	57	13.9	10	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.41	747.0	30.10	764.5	62	11.1	87	SE	10	4.5	.....	10cs	0	W	.....	0	0	Cloudy	
Cincinnati Ohio	29.51	749.5	30.17	766.3	53	11.7	73	NE	4	1.8	.....	9ck	0	W	.....	0.04	1.0	Cloudy	
Cleveland, Ohio	29.47	748.5	30.20	767.1	52	11.1	54	N	8	3.6	.....	1k	0	N	.....	0.04	1.0	Clear	
Coleman City, Texas	28.13	714.5	29.75	755.6	65	18.3	100	SW	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Columbus, Ohio	29.33	745.0	30.19	766.8	46	7.8	85	NE	3	1.3	.....	2c	Fog	Calm	Calm	0.08	0.8	Fair	
Conero, Texas	28.00	711.2	29.63	752.6	64	17.8	78	SE	6	2.7	.....	5k	0	SE	.....	0	0	Fair	
Corsicana, Texas	29.46	748.3	29.91	759 7	70	21.1	95	SE	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Davenport, Iowa	29.38	746.2	30.01	762.2	52	11.1	73	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Decatur, Texas	28.78	731.0	29.91	759.7	66	18.9	95	SE	8	3.5	.....	.....	Fog	.....	Calm	0	0	Foggy	
Denison, Texas	29.13	739.9	29.90	759.4	68	20.0	95	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Denver, Colorado	24.58	624.3	29.80	756.9	51	10.6	16	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	28.94	735.1	29.80	756.9	54	12.2	80	SE	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.52	749.8	30.22	767.6	40	4.4	82	N	2	0.9	.....	0	0	.....	.....	0.02	0.5	Clear	
Dodge City, Kansas	27.14	689.3	29.32	744.7	60	15.6	94	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.31	744.5	30.01	762.0	49	9.4	64	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Duluth, Minnesota	29.21	741.9	29.88	758.9	47	8 3	85	NE	16	7.2	.....	.....	10s	.....	NE	0	0	Cloudy	
Eagle Pass, Texas	29.17	740.9	29.89	759.2	68	20.0	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.41	747.0	29.47	748.5	51	10.6	59	SW	14	6.3	.....	5ck	0	SW	.....	0.28	7.1	Fair	
Edinburg, Texas	.....	.....	.....	.....	74	23.3	90	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	68	20.0	42	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.44	747.8	30.16	766.1	50	10.0	65	N	13	5.8	.....	1k	0	N	.....	Inap.	Inap.	Clear	
Escanaba, Michigan	29.48	748.8	30.16	766.1	34	1.1	79	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.41	721.6	30.01	762.2	59	15.0	38	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.51	647.9	29.58	751.3	49	9.4	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	60	15.6	44	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.38	746.2	29.90	759.4	66	18.9	95	SE	3	1.3	.....	2c	0	SW	.....	0	0	Clear	
Fort Griffin, Texas	28.61	726.7	29.85	758.2	62	16.7	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.70	703 6	29.51	750.3	70	21.1	90	SW	11	4.9	.....	.....	10s	.....	SW	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.65	727.7	29.71	754.6	69	20.6	75	SE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.20	716.3	29.70	754.4	70	21.1	75	Calm	0	0	.....	.....	10ks	.....	Calm	0.02	0.5	Cloudy	
Galveston, Texas	29.90	759.4	29.94	760.5	77	25.0	69	N	4	1.8	.....	2k	0	Calm	.....	0.07	1.8	Clear	
Graham, Texas	28.82	732.0	29.83	757.7	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.50	749.3	30.17	766.3	40	4.4	73	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.34	745.2	30.13	765.3	50	10.0	72	NE	4	1.8	.....	0	8s	.....	Calm	0	0	Cloudy	
Indianola, Texas	29.91	759.7	29.93	760 2	78	25.6	86	Calm	0	0	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.77	730.7	29.86	758.4	66	18.9	89	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.99	761.7	30.02	762.5	75	23.9	90	E	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
Keokuk, Iowa	29.32	744.7	29.93	760.2	56	13.3	75	SE	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Key West, Florid	29.97	761.2	30.00	762.0	82	27.8	83	E	6	2.7	.....	6c;k	0	W; E	.....	0	0	Fair	
Kittyhawk, North Carolin	30.05	763.3	30.07	763.8	70	21.1	90	W	7	3.1	.....	5c	0	Calm	.....	0	0	Fair	
Knoxville, Tenne-see	29.12	739.6	30.10	764.5	64	17.8	94	Calm	0	0	.....	.....	10n	.....	SW	0.13	3.3	Heavy rain	
La Crosse, Wisconsin	29.21	741.9	29.94	760.5	52	11.1	72	S	12	5.4	.....	.....	10s	.....	S	0.05	1.3	Cloudy	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	49	9.4	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.45	748.8	29.80	756.9	75	23.9	90	SE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Lead City, Dakota	24.56	623.8	29.84	757.9	35	1.7	80	N	12	5.4	.....	.....	10n	.....	N	0.03	0.8	Light rain	
Leavenworth, Kansas	28.96	735.6	29.77	756.1	63	17.2	89	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.63	752.6	29.97	761.2	55	12.8	87	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.53	750.0	30.08	764 0	60	15.6	65	NE	8	3.6	.....	.....	10s	.....	E	0.54	13.7	Cloudy	
Lynchburg, Virginia	29.40	746.7	30 06	763.5	66	18.9	78	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Madison, Wisconsin	29.07	738.4	30.06	763.5	50	10.0	86	SE	12	5.4	.....	.....	10n	.....	W	0.05	1.3	Thunder-storm	
Marquette, Michigan	29.39	746 5	30.11	764.8	38	3.3	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.29	718.6	29.98	761 5	70	21.1	95	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.36	745.7	30.10	764.5	50	10.0	79	S	4	1.8	.....	.....	10s	.....	W	0	0	Cloudy	
Mobile, Alabama	29.86	758 4	29.90	759.4	70	21.1	97	NE	4	1.8	.....	.....	10s	.....	NE	2.98	75.7	Cloudy	
Montgomery, Alabama	29.76	755.9	29.99	761.7	67	19.4	94	NE	9	4.0	.....	.....	10n	.....	E	0.82	20.8	Heavy rain	
Morgantown, West Virgini	29.12	739.6	30.17	766.3	54	12.2	74	N	1	0.4	.....	5cs	Fog	NW	.....	0.01	0.3	Fair	
Mt. Washington, N. H.	23.24	590.3	29.60	751.8	23	— 5.0	100	NW	99	44.2	.....	.....	Fog	.....	NW	0.60	15.2	Foggy	
Nashville, Tennessee	29.54	750.3	30.07	763.8	66	18.9	89	SE	2	0 9	.....	.....	10n	.....	SE	0.01	0.3	Light rain	
New Haven, Connecticut	29.86	758.4	29.98	761.5	57	13.9	58	W	6	2.7	.....	5c	0	Calm	.....	0.05	1.3	Fair	
New London, Connecticut	29.90	759.4	29.95	760.7	55	12.8	62	W	10	4 5	.....	5cs	2s	NW	W	0.02	0.5	Fair	
New Orleans, Louisiana	29.85	758.2	29.91	759.7	71	21.7	90	NW	4	1.8	.....	.....	10s	.....	Calm	2.11	53.6	Cloudy	
Newport, Rhode Island	29.86	758.4	29.90	759.4	55	12.8	54	W	25	11.2	.....	5c	0	W	.....	0.08	2.0	Fair	
New York, New York	29.89	759.2	30.00	763.5	53	11.7	48	W	21	9.4	.....	8cs	0	.....	.....	Inap	Inap.	Fair	
Norfolk, Virginia	30.01	762.2	30.07	763.8	68	20.0	90	W	2	0.9	.....	5cs	Haze	Calm	.....	0	0	Fair	
North Platte, Nebraska	26.74	679.2	29.29	744.0	37	2.8	95	NW	4	1.8	.....	2c	Fog	Calm	Calm	0	0	Fair	
Olympia, Washington Ter.	29.90	759.4	29.94	760.5	47	8.3	92	S	7	3.1	.....	.....	10n	.....	Calm	0.45	11 4	Light rain	
Omaha, Nebraska	28.59	726.2	29.62	752.3	61	16.1	82	S	10	4.5	.....	0	Haze	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	29.78	756.4	30.10	764.5	49	9.4	71	NW	16	7.2	.....	8k	0	NW	.....	0.13	3.3	Fair	
Pembina, Dakota	28.60	726.4	29.41	747.0	45	7.2	76	SE	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Philadelphia, Pa	30.04	763.0	30.09	764.3	57	13.9	52	NW	20	8.9	.....	2c	Fog;hz	Calm	Calm	Inap.	Inap.	Clear	
Phœnix, Arizona	28.75	730.2	.....	.....	63	17.2	28	E	.....	.....	4	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.72	449.6	29.93	760.2	23	— 5.0	34	W	56	25.0	.....	2cs	0	Calm	.....	0	0	Clear	
Pioche, Nevada	24.04	610.6	29.51	757.2	50	10.0	26	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.19	766.8	44	6.7	92	NW	4	1.8	.....	0	Fog	.....	NW	Inap.	Inap.	Clear	
Port Huron, Michigan	29.48	748.8	30.15	765.8	49	9.4	71	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.64	752.8	29.69	754.1	53	11.7	48	SW	18	8.0	.....	5k	0	NW	.....	0.04	1.0	Fair	
Portland, Oregon	30.00	762.0	30.11	764.8	49	9.4	93	S	13	5.8	.....	2ck	8ks	W	S	0.10	2.5	Cloudy	
Prescott, Arizona	24.80	629.9	30.16	766.1	44	6.7	23	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.15	740.4	29.94	760.5	71	21.7	90	SE	1	0.4	.....	0	0	.....	.....	0	0	Foggy	
Punta Rassa, Florida	30.01	762.2	30.03	762.7	79	26.1	87	SE	9	4.0	.....	5cs	5s	SW	Calm	0.36	9.1	Cloudy	
Red Bluff, California	29.66	753.4	30.02	762.5	53	11.7	48	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.77	756.1	29.98	761.5	77	25.0	86	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	Foggy	
Rochester, New York	29.46	748.3	30.08	764.0	46	7.8	77	W	10	4.5	.....	1k	0	Calm	.....	0.03	0.8	Clear	
Roseburg, Oregon	29.61	752.1	30.20	767.1	38	3.3	96	Calm	0	0	.....	0	Fog	.....	Calm	0.01	0.3	Clear	
Sacramento, California	29.89	759.2	29.97	761.2	62	11.1	86	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.41	747.0	29.97	761.2	62	16.7	83	E	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	
St. Marks, Florida	29.94	760.5	29.95	760.7	74	23.3	100	SE	8	3.6	.....	.....	10n	.....	SE	0.70	17.8	Light rain	
St. Paul, Minnesota	28.94	735.1	29.75	755.6	50	10.0	64	SE	19	8.5	.....	.....	10s	.....	W	0	0	Cloudy	
Salt Lake City, Utah	25.98	659.8	30.01	762.2	47.0	8.3	41	NW	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
San Antonio, Texas	29.26	743.2	29.82	757.4	74	23.3	90	SW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Diego, California	29.93	760.2	30.01	762.2	57	13.9	94	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.54	750.3	30.22	767.6	52	11.1	60	NE	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.03	762.7	30.06	763.5	55	12.8	50	NW	23	10.3	.....	5c	0	NW	.....	0.30	7.6	Fair	
San Francisco, California	29.94	760.5	30.01	762.2	53	11.7	86	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	43	6.1	36	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	73	22.8	95	E	6	2.7	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	71	21.7	95	SE	3	1.3	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Silver City, New Mexico	24.32	617.7	.....	.....	44	6.7	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.09	764.3	30.12	765.0	68	20.0	95	N	2	0.9	.....	10cs	0	SW	.....	0	0	Cloudy	
Springfield, Massachusetts	29.80	756.9	29.93	760.2	55	12.8	56	W	13	5.8	.....	5k	0	W	.....	0.56	14.2	Fair	
Stockton, Texas	26.90	683.2	29.90	759.4	60	15.6	55	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.76	755.9	29.81	757.2	52	11.1	60	W	17	7.6	.....	0	0	.....	.....	0.38	9.7	Clear	
Toledo, Ohio,	29.49	749.0	30.18	766.6	43	6.1	75	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	67	19.4	41	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.05	763.3	30.08	764.0	73	22.8	100	SE	9	4.0	.....	.....	10n	.....	Calm	0.33	8.4	Light rain	
Umatilla, Oregon	29.72	754.9	.....	.....	49	9.4	57	SW	12	5.4	.....	0	5s	.....	W	0.01	0.3	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	40	4.4	100	SW	.....	.....	4	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.05	737.9	29.85	758.2	70	21.1	95	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.75	755.6	30.00	762.0	68	20.0	95	SE	4	1.8	.....	.....	10s	.....	Calm	1.38	35.1	Cloudy	
Virginia City, Montana	24.16	613.6	29.64	752.8	31	— 0.6	79	W	12	5.4	.....	0	0	.....	.....	0.17	4.3	Clear	
Visalia, California	29.64	752.8	30.02	762.5	52	11.1	78	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.99	761.7	30.11	764.8	59	15.0	65	NW	10	4.5	.....	2c	2ks	W	W	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	46	7.8	62	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.02	762.5	30.10	764.5	67	19.4	94	Calm	0	0	.....	.....	10s;fg	.....	W; Calm	0	0	Cloudy	
Winnemucca, Nevada	25.71	653.0	30.07	763.8	35	1.7	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.82	757.4	29.88	758.9	55	12.8	55	NW	20	8.9	.....	10cs	0	NW	.....	0.12	3.0	Cloudy	
Yankton, Dakota	28.30	718.8	29.52	749.8	59	15.0	88	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.69	754.1	29.86	758.4	67	19.4	48	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.06	763.5	30.10	764.5	20.0	— 6.7	93	E	18	8.0	.....	3c	0	SE	.....	0.01	0.3	Fair	J. Fortescue, W. Wood
Havana, Cuba, W. I	29.97	761.2	29.99	761.7	82	27.8	78	Calm	0	0	.....	8c	0	Calm	.....	0	0	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.95	760.7	29.98	761.5	81	27.2	79	N	.....	.....	1	0	0	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	86	30.0	83	E	3	1.3	.....	2c	5ks	NE	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.13	765.3	30.14	765.5	81	27.2	87	Calm	0	0	.....	2c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	83	28.3	.....	NE	5	2.2	.....	.....	.....	.....	.....	0	0	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	84	28.9	75	NE	.....	.....	2	3c	6k	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A	25.27	641.8	.....	.....	66.5	19.2	73	Calm	0	0	.....	7cs;k	0	.....	.....	0	0	Hazy	Thomas Herran.
Portland, Jamaica, W. I	29.78	756.4	30.09	764.3	74	23.3	85	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,064.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.05	763.3	74	23.3	74	23.3	90	NW	1	0.4	.....	.....	10	.....	W	2.20	55.9	.....	.....	Stormy.....	
NavyYard,Portsmouth,N.H	29.73‡	755.1‡	.....	.....	52	11.1	54	WNW	9	4.0	.....	.....	10	.....	.....	0.04	1.0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	29.90*	759.4*	65	18.3	63.5	17.5	97	NE	.....	.....	3	.....	10ck;s	.....	N	0.06	1.5	.....	.....	Cloudy.....	
Adams. S. 39° 55′, W. 84° 57′.....	30.36	771.1	66	18.9	55	12.8	87	NE	.....	.....	3–4	.....	8	.....	NE	.....	.....	Smooth	NE	Cloudy.....	
Alaska, S. 27° 45′ W. 73° 19′.....	30.23	767.8	63	17.2	60	15.6	88	SSE	.....	.....	5	.....	0	.....	.....	0	0	Long	S	Blue sky.....	
Alliance, N. 38° 38′, E. 25° 20′.....	30.10‡	764.5‡	.....	.....	65	18.3	73	N	.....	.....	2–3	.....	6	.....	N	.....	.....	.....	.....	Pleasant.....	
Ashuelot, Kobe, Japan.....	30.04	763.0	70	21.1	69	20.6	75	N	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.06	763.5	52	11.1	69	20.6	90	SE	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Fair.....	
Colorado, New York, N. Y.....	30.06‡	763.5‡	.....	.....	56	13.3	51	NW	14	6.3	.....	.....	8	.....	NW	0.02	0.5	.....	.....	Hazy.....	
Constitution, Havre, France.....	.....	.....	.....	.....	62	16.7	100	WSW	.....	.....	6	.....	10	.....	WSW	.....	.....	.....	.....	Squally.....	
Despatch, Constantinople, Turkey	30.14‡	765.5‡	.....	.....	70	21.1	66	NE	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Essex, S. 37° 4′, W. 12° 20′.....	30.35	770.9	60	15.6	59	15.0	88	NE	.....	.....	2	.....	8	.....	NE	.....	.....	Light	SW	Cloudy.....	
Franklin, Norfolk, Va.....	30.16	766.1	72	22.2	69	20.6	100	W	6	2.7	.....	.....	2	.....	NW	0	0	.....	.....	Clear.....	
Gettysburg N. 33° 43′ 00″, E. 23° 22′ 45″	30.06‡	763.5‡	.....	.....	83	28.3	83	NNW	.....	.....	3	.....	5	.....	Calm	0	0	Light	E	Pleasant.....	
Guard. S. 9° 54′, W. 33° 29′.....	30.06	763.5	80	26.7	80	26.7	78	ESE	.....	.....	4	.....	2	.....	E	.....	.....	Long	E	Clear.....	
Hartford, S. 24° 06′, W. 44° 39′.....	30.11	764.8	.....	.....	72	22.2	90	SW	12.8	5.7	.....	.....	8	.....	SW	0.03	0.8	Smooth	.....	Cloudy.....	
Marion, Trieste, Austria.....	30.01	762.2	68	20.0	71	21.7	71	N	.....	.....	1	.....	0	.....	.....	Mod'ate	Mod'ate	.....	.....	Clear.....	
Michigan, Erie, Pa.....	30.05†	763.3†	.....	.....	51	10.6	66	NW	.....	.....	4	.....	2	.....	NW	.....	.....	.....	.....	Clear.....	
Monocacy, Yokohama, Japan	29.89‡	759.2‡	.....	.....	64	17.8	83	NNE	.....	.....	1–2	.....	10	.....	NNE	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.....	30.25	768.3	75	23.9	74	23.3	95	E	6	2.7	.....	.....	8	.....	.....	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.08†	764.0†	.....	.....	60	15.6	88	S	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.41	772.4	60	15.6	52	11.1	79	SW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	61	16.1	94	N	.....	.....	1	.....	2	.....	E	.....	.....	.....	.....	Clear.....	
Plymouth. N. 35° 22′, W. 65° 29′.....	30.27	768.8	77	25.0	77	25.0	69	SW	.....	.....	3	.....	2	.....	.....	.....	.....	Light	SW	Clear	
Powhatan, Portsmouth, N. H.....	29.77‡	756.1‡	.....	.....	53	11.7	61	W	24.0	10.7	.....	.....	8	.....	.....	0	0	.....	.....	Overcast.....	
Ranger, Hong-Kong, China.....	30.11	764.8	83	28.3	83	28.3	87	SW	.....	.....	1	.....	2	.....	S	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas.....	29.89	759.2	77	25.0	77	25.0	95	NNE	.....	.....	1	.....	8	.....	N	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md.....	30.05‡	763.3‡	.....	.....	61	16.1	66	NW	.....	.....	2	.....	5?	.....	SW	0	0	.....	.....	Clear?.....	
Saratoga, Philadelphia, Pa.....	29.94	760.5	.....	.....	58	14.4	64	WNW	.....	.....	3	.....	2	.....	W	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa.....	30.02	762.5	60	15.6	60	15.6	71	NW	8	3.6	.....	.....	8	.....	W	0.09	2.3	.....	.....	Fair.....	
Supply, Havre, France.....	29.58	751.3	64	17.8	62	16.7	88	W	.....	.....	5–7	.....	10	.....	.....	.....	.....	.....	.....	Showery.....	
Swatara, Boston, Mass.....	29.82‡	757.4‡	.....	.....	54	12.2	67	WNW	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....	Fair.....	
Trenton, N. 36° 24′, W. 8° 00′.....	30.16‡	766.1‡	.....	.....	67	19.4	95	NNE	.....	.....	3	.....	2	.....	E	0	0	Smooth	.....	Clear.....	
Tuscarora, N. 31° 13′, W. 116° 31′.....	29.75	755.6	62	16.7	62	16.7	88	NW	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Vandalia, N. 36° 02′, W. 4° 45′.....	30.11‡	764.8‡	.....	.....	70	21.1	80	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	53	11.7	67	W	9	4.0	.....	.....	2	.....	.....	0.22	5.6	.....	.....	Clear.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35°.50', W. 167° 03'		30.33*	770.4*	71.	21.7	100	ESE			3		7		SSE		Small	SSE	Misty	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Victoria, B. C		29.88*	758.9*	51	10.6	79	SE			2		6		SE	Blank			Fine	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 44° 10', W. 67° 20'		29.65*	753.1*	55	12.8	93	SW			6		10k		WSW		Mod'ate	S	Raining	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 32° 53', E. 134° 53'		29.93	760.2	74	23.3	95	WNW			4		2		W			E	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 43° 44′ W. 68° 20′		29.58*	751.3*	60	15.6	94	SW			3		10		WSW	Heavy	Rough	SW	Cloudy	Captain Sargent.
S. S. Ohio, N. 49° 48′ 30″, W. 35° 45′ 30″		29.53	750.0	55	12.8	74	S			5		10		SW	Light	Mod'ate	E	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Laguayra, Venezuela		29.95	758.2	85	29.4	64	Calm	0	0		5ck	2k			0	Smooth		Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 11, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador								N			3		2			0	0	Fair	Dr. Ollive.
Nemours			30.09	764.2	73.6	23.1	76	NE			3		5			0	0	Cloudy	Kesxuche.
Algiers			30.00	762.1	75.9	24.4	75	NE			5		2			0	0	Fair	Tourillere.
La Calle			30.08	763.9	75.2	24.0	77	E			3		0			0	0	Clear	Foufrede.
Tunis			30.14	765.5	73.8	23.0	65	N			5		0			0	0	Clear	Jacques.
Sfax			30.20	767.3	73.8	23.0		N			5		3			0	0	Pretty fair	Gau.
Saida			30.02	762.6	82.4	28.0	27	S			3		3			0	0	Fair	Herbin.
Tebessa			30.08	764.1	73.8	23.0	30	N			5		2			0	0	Fair	Watrin.
Geriville			30.05	763.2	79.5	26.4	44	SE			0		2			0	0	Clear	Brugniaux.
Laghouat			30.17	766.3	83.8	28.8	41	Calm			0		0			0	0	Very fair	Bertrand.
Biskra			30.18	766.5	89.2	31.8	39	WNW			1		1						Chauvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.82	757.5	30.13	765.3	62.1	16.7	92	SW			2		10			0	0		Prof. Ivan Stoxir.
Cracow, I. R. Observatory	29.22	742.3	29.98	761.5	63.0	17.2	76	WNW			1		10			0	0		Dr. Wierzbiski
Eperies	29.16	740.6	30.03	762.7	59.7	15.4	81	S			1		6cs;s			0.020	0.50		Julius Mikolik.
Gratz	28.87	733.2	30.12	765.0	57.7	14.3	86	W			3		10			0.043	1.10		Andreas Rospini.
Hermannstadt	28.00	726.4	30.08	763.9	57.2	14.0	55	SE			1		4			0	0		Prof. A. Gottschling.
Kremsmünster	28.75	730.2	30.08	763.9	59.0	15.0	69	WSW			2		3			0	0		Prof. O. Wagner
Lemberg	29.01	736.8	29.98	761.4	61.7	16.5	69	NW			1		3			0	0		Dr. T. Stanecki.
Pola	29.97	761.3	30.08	764.1	69.3	20.7	75	S			1		10ks			0	0		I.R.Hydrographic Office
Szathmar	29.64	752.9	30.10	764.4	67.6	19.8	87	S			2		8			0	0		Julius Csics, S. J.
Szegedin	29.76	755.9	30.04	762.9	64.8	18.2	75	S			2		7			0	0		Karl Stancel.
Trieste	30.00	761.9	30.10	764.5	66.9	19.4	88	Calm			0		10			0.512	13.0	Raining	P. Busin.
Vienna	29.38	746.2	30.08	764.0	64.0	17.8	63	N			3		2			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet.; Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.56	725.5	30.08	764.0	51.6	10.9	71	SW			4		8			0	0		Prof. M. Passau.
Brussels	29.77	756.1	29.97	761.2	56.3	13.5	71	WSW			5	1	2	W	WSW	0	0		Royal Observatory
Furnes	29.97	761.2	29.99	761.8	57.6	14.2	65	WSW			5		5			0.012	0.3		M. E. de Cae.
Maeseyck	29.85	758.1	29.98	761.4	58.3	14.6	71	SW			4		5			0.020	0.5		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

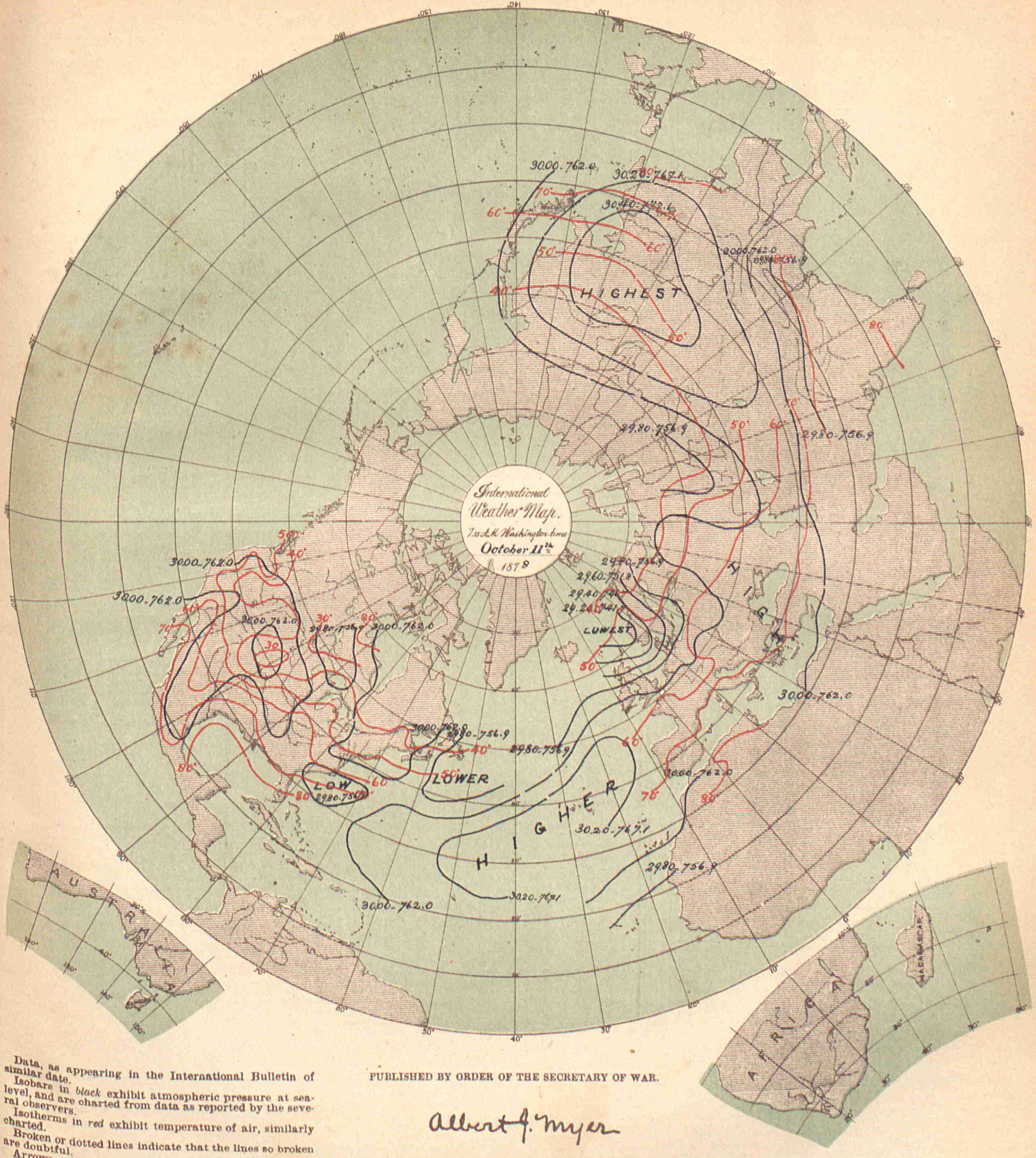
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.
Aberdeen	29.39	746.5	29.48	748.8	55.0	12.8		W	26	11.6			7			0	0	D. clouds	W. Boswell.
Ardrossan	29.66	753.4	29.68	753.9	53	11.7		WNW			7		8					Squally	George Carrick.
Armagh, Observatory			29.89	759.2	53.0	11 7		W	12	5.4			8					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.82	757.4	52.7	11.5		W	40	17.9			6					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.39	746.5	29.79	756.7	51.7	10.9		W			6		6			0.33	8.4	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	85	29.4		SE			2		4					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.90	759.4	58.0	14.4		W			8		1					D. clouds	H. Todd.
Cardington			29.93	760.2	54.0	12.2		W			5		5					D. clouds	John McLaren.
Chatham, School M. E.	29.82	757.4	29 94	760.5	56.2	13.4		W			2		7					D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	28.27	718.0	29.74	755.4	48.4	9.1		S			7		4					Raining	Alexander Watt.
Donaghadee	29.81	757.2	29.84	757.9	52	11.1		NW			5		2					D. clouds	J. Mac Gowan.
Dover	29.93	760.2	29.96	761.0	58	14.4		W			4		3					¼ clouded	J. Costello.
Falmouth, Observatory	29.86	758.4	30.09	764.3	55.7	13.2		NW			2		8					Overcast	The Staff.
Fort Napier, (Natal)	27.36	694.9	29.68	753.9	85.4	29.7		NE			2		1					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.70	754.4	29.92	760.0	84.5	29.2		S			2		4					D. clouds	
Galway, Queen's College			29.95	760.7	56	13.3		W			3		5					D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8				E			1		2					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.46	748.3	29.66	753.4	51.9	11.1		W			6		9					D. clouds	D. G. Maclean.
Great Yarmouth	29.82	757.4	29.83	757.7	56	13.3		W			5		4					Squally	G. T. Watson.
Greenwich, Royal Obs'y	29.77	756.1	29.94	760.5	58.9	14.9		W			4		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.85	758.2	30.07	763.8	57	13 9		WNW			3		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			30.08	764.0	59	15.0		W			2		8ck			0.10	2.5	Fine	M. P. Moyle.
Holyhead	29.89	759.2	29.94	760.5	53	11.7		WNW			5		8					D. clouds	John Tilston.
Jersy	29.83	757.7	30.12	765.0	59.5	15.3		W			5		5					D. clouds	J. Fisher.
Kew, Observatory	29.92	760.0	29.96	761.0	56.5	13.6		W	18	8.0			7					D. clouds	The Staff.
Kingstown	29.92	760.0	29.94	760.5	54	12.2		WNW			6		3					Blue sky	George Mitchell.
Leicester, Museum			29.89	759.2	54.5	12.5		NW			2		8					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.03	762.7	30.10	764.5	76	24.4		NE			2		4k					D. clouds	Sergt. Beckett.
Nairn	29.42	747.3	29.51	749.5	53	11.7		W			3		8					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	83.0	28.3		SW			1		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.55	750.6	29.74	755.4	57.7	14.3		WNW			4		7k;ks;d		WNW	0.005	0.13	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.37	746.0	29.89	759.2	55.2	12.9		WSW			6		2					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.95	760.7	55	12.8		W			4		5					Showery	H.E. Bellamy.
Plymouth	29.97	761.2	30.04	763 0	57.0	13.9		WNW			2		2					D. clouds	John Merrifield.
Roche's Point	30.01	762.2	30.06	763 5	56	13.3		NW			2		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.85	758.2	30.01	762.2	55	12.8		WNW			4		3					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			29.36	745.7	53.2	11.8		WNW	40	17.9			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			29.95	760.7	70.0	21.1		NE			2		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.56	750.8	29.84	757.9	53.9	12.2		SW			4		8			0.02	0.5	Overcast	W. F. Cooper.
Silloth, Rectory	29.77	756.1	29.80	756.9	53.0	11.7	70	W			6		4			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.42	747.3	29.83	757.7	52.4	11.3		W			5		10					Drizzling	Rev. S. J. Perry.
Stornoway, Lews C. (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.73	755.1	29.95	760.7	56.8	13.8		W			1–2		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	29.35	745.5	29.41	747.0	55	12.8		WNW			6		8					Showery	John Trotter.
Truro, Royal Institution			30.12	765.0	58	14.4		NW			6		6					D. clouds	W. Newcombe.
Valencia, Observatory	30.03	762.7	30.06	763.5	55.0	12.8		W	9	4.0			6					D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.34	745.2	45.0	7.2	81	NW			3		7k			0.47	11.9	Hazy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	75.4	24.1	63	W	8.5	3.8		0	8			0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.68	753.9	29.77	756.1	48.7	9.3	74	NW	14	6.3			8		W	0.13	3.3	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Bar. corr. Inches	Millimeters	Red. Inches	Millimeters	Fahrenheit	Centigrade	Per cent	Wind From—	Miles per hour	Meters per second	Force	Clouds Up'er	Low'r	Upper From—	Lower From—	Sea or swell. Height scale 0–9	Direction from—	Weather	Observer
Brig Catherine, N. 41° 55′, W. 60° 25′			29.84	757.9	67	13.9		NW			6		7			6	Confused.	Showery	Capt. Alex. Wilson.
Barque Commewyne, N. 8° 45′, W. 55° 5′			29.98	761.5	85	29.4		ESE			3		1			2	NE	Blue sky	Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 20° 0′, W. 63° 35′			29.92	760.0	86	30.0					2		6				Confused.	Squally	Capt. D. W. A. Quaile
Schooner Traveller, Off Kish Light			29.98	761.5	55	12.8		WNW			6		6					D. clouds	Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			Mr. Ansart.
San José	26.25	666.7	29.97	761.2	66.2	19.0	92	NE			1	3cs				Inap.	Inap.		Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.67	753.5	29.71	754.7	58.1	14.5	77	SW			4		8						
Faröe	29.61	752.1	29.68	752.6	57.4	14.1	85	WSW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.21	742.0	29.25	742.9	50.9	10.5	72	W			4		6						
Vestervig	29.35	745.4	29.52	749.7	54.3	12.4	85	SW			6		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.61	752.2	30.17	766.2	55.4	13	74	W			1		2		E	0.35	9.	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.19?	766.7?	30.03?	762.7?	61.9	16.6	73	SW			3		5		NE	0.12	3.	Cloudy	Bonvallet, Director.
Avignon, Normal School	30.09	764.3	30.17	766.3	67.7	19.8	61	N			1		10			0.319	20.8	Raining	M. Giraud, Director.
Bar-sur-Seine	29.60	751.9	30.16	766.0	58.3	14.6	56	W			2		8kn			0.094	2.4	Very cloudy	C. Saillard.
Beaumette Obs'y 'Angers)																			Albert Cheux.
Beauvais, Normal School	29.83	757.6	30.11	764.9	55.0	12.8	78	WNW			1		2		WNW	0.335	8.50	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon	29.15	740.4	30.03	762.8	59.0	15	71	SW			4		2		SW	0.04	1.	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.37	746.0	30.30	769.7	59.2	15.1	60	W			1		8ck		W	0.04	1.	Very cloudy	M. Marlot, Director.
Bourges, Normal School	29.64	752.8	30.19	766.8	59.7	15.4	72	SSW			2		5k		SSW	0.102	2.6	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.84	758.0	30.09	764.2	62.6	17.0	73	W			1		7		W	0.059	1.50		The Staff.
Carcassonne, Normal School	29.81	757.2	30.21	767.4	69.8	21	49	W			2		2	NW	W	0	0	Slightly cl'dy	Septembre, Director.
Caen	30.02	762.4	30.09	764.2	60.4	15.8	69	SW			2		3		SW	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.61	749.5	30.08	763.9	56.7	13.7	93	WSW			2		6		E	0.59	15.		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.78	756.4	30.10	764.4	60.6	15.9	69	W			6		5k		E	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.86	733.0	30.21	767.3	59.7	15.4	53	W			1		2		W	0.024	0.6	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.35	745.6	30.24	768.0	55.8	13.2	62	W			3		6kn		W	0.453	11.5		Dr. Coulet, Director.
Commune de Grèsque*	29.06	738.0	30.20	767.0	61.3	16.3	50	W			4		5	SW		0.16	4.	½ covered	M. Kina.
Grenoble, Normal School	29.39	746.4	30.15	765.9	60.4	15.8	61	NNW			1		5k		N	0.374	9.5	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.86	758.4	30.17	766.2	57.4	14.1	55	NW			3		2	WNW	NW	0.522	13.25	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.31	744.4	30.22	767.6	58.8	14.9	63	W			1		8		Calm	0.051	1.30	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	30.07	763.8	30.17	766.4	61.2	16 2	63	WSW			2			W	SW	0.031	0.8		T. Carré, Director.
Mâcon, Normal School	30.10	764.5	30.13	765.3	59.0	15	89	W			1		5		W	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	29.13	739.8	30.17	766.2	56.8	13.8	66	SW			1		2k		NE	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.98	761.4	30.18	766.5	69.8	21	51	N			1		2		N	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	29.14	740.2	30.20	767.1	60.1	15.6	64	N			3		1	S	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.30	642.5			39.0	3.9	95	W			2		10		W	0.224	5.7		Alluard, Director.
Rochefort, Naval Obs'y	30.15	766.6	30.21	767.4	61.9	16.6	75	W			3		2	W	W	0	0	¼ Covered	Lt. Decante, Director.
Rouen, Normal School	30.01	762.3	30.10	764.5	58.6	14.8	54	WSW			2		10		W	0.146	3.7	Covered	F. Lucard, Director.
Saint Malo (Port)			30.13	765.2	59.0	15.0	58	SW			3		5		SW	0	0	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.95	760.8	30.12	765.0	57.4	14.1	64	WSW			1		0	W	W	0	0		E. Renou.
Tarbes, Normal School	29.09	738.9	30.17	766.3	59.0	15	79	SSW			1		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.50	749.4	30.21	767.3	64.4	18	85	SSW			1		2		SW	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.61	757.1	29.84	757.8	80.6	27										0	0		L'Abbé Marchési.
Lyons, Observatory			30.25	768.4									5			0	0		
Marseilles, Observatory			30.13	765.4	68.0	20.0	42	WNW			2–3		5			0	0		The Staff.
Mont-Louis	24.99	634.8	30.31	769.8	50.9	10.5	51	WNW			3		2		SW	0	0		M. Cave.
Nice			30.08	764.1	67.3	19.6	85	SW			1		2			1.331	33.8		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.83	757.7	30.11	764.7	57.4	14.1	62	WSW			4		5		W	0.075	1.9		Marié Davy, Director
Perpignan			30.20	767.0	69.4	20.8	43	W	5.6	2.60			2		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.63	574.8			40.3	4.6		SW			4		9			0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.53	750.1	30.26	768.6	62.4	16.9	46	NNW			1		2			0	0		The Staff.
Tours	29.97	761.2	30.17	766.2	59.5	15.3	58	WSW			1		7		W	0.150	3.8		C. Marquet.
Versailles			30.12	765.0	58.3	14.6	45	NW			1		7			0.150	3.79	Cloudy	Dr. A. Berigny.
Zi-Ka-Wei, (near Shanghai)	30.30	769.7	30.33	770.3	61.7	16.5	72	NNE	5.4	2.4			10n			0.016	0.4	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèsque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèsque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 303 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,360 m., or 7,702.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:55, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.15	740.4	29.99	761.8	59.0	15.0	63	W			5		7	W		0.16	4.	Raining	Prof. Dr. Hoh.
Berlin	29.74	755.5	29.91	759.8	59.5	15.3	69	SW			4		8			0.020	0.5	Raining	Prof. Arndt.
Breslau	29.50	749.4	30.04	762.9	61.9	16.6	63	S			3		7			0	0		Royal University Obs'y
Carlsruhe	29.68	753.8	30.10	764.4	57.9	14.4	69	SW			2		5			0.035	0.9	Raining	Albert Sens.
Cassel	29.34	745.1	29.95	760.6	58.3	14.6	53	W			3		5	W		0.030	0.76		Dr. H. Möhl.
Crefeld	29.77	756.2	29.93	760.3	59.5	15.3	56	SW			6		4k			0.04	1.		Director Lose.
Emden	29.82	757.5	29.86	758.4	54.3	12.4	92	SW			5		10			0	0		Prof. Prestel.
Frankfort on the Main	29.68	753.9	30.04	763.0	61.7	16.5		WSW			4		6			0.039	1.0		Physical Society.
Friedrichshafen	28.72	729.5	30.15	765.8	57.6	14.2	68	SSW			4		5	W		0	0		M. Wilhelm.
Hamburg	29.75	755.6	29.82	757.4	57.6	14.2	80	SW			6		9kn			0	0	Squally	Captain F. Hegemann.
Kiel	29.76	755.9	29.78	756.3	57.4	14.1	78	SW			5		10			0.027	0.68		Prof. G. Karsten.
Königsberg, (Prussia)	29.80	757.0	29.89	759.1	62.6	17.0	73	SW			3		4			0	0		Prof. E. Luther.
Köslin			29.83	757.6	59.0	15.0		SW			2		4			0	0		H. Müller.
Leipsic, Observatory	29.56	750.9	29.98	761.5	59.4	15.2	56	WSW			4		8	SW		Inap.	Inap.	Sprinkling	Prof. Bruhns.
Memel, Naval School	29.82	757.5	29.87	758.7	58.6	14.8	86	WSW			3		10ks						Reinbrecht and Skalweit.
Neufahrwasser	29.87	758.8	29.89	759.2	63.0	17.2	65	SW			3		9			0	0		A. Lothes.
Posen	29.71	754.6	30.00	761.9	62.2	16.8	63	WSW			6		9			0.008	0.2		Dr. Magener.
Strassburg (in Alsace)	29.61	752.0	30.15	765.8	59.0	15.5	62	SW			5		7	WSW		0.016	0.41		Astronomical Observatory.
Stuttgart	29.13	740.0	30.09	764.2	60.8	16.0	44	W			1		5	W		0	0		Prof. Schoder.
Treves, (Trier)	29.52	749.7	30.04	763.0	58.6	14.8	60	W			7		8			0.100	2.55	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.59	726.2	30.08	763.9	56.7	13.7	53	W	6.7	3.0			5ck		WSW	0.008	0.2		Dr. Von Bebber.
Wustrow, Naval School	29.79	756.6	29.81	757.2	58.1	14.5	73	SW			6		10ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.69	754.2	30.07	763.8	76.3	24.6		SW			1.0							⅛ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.41	747.1	29.88	759.0	88.5	31.4	45	W					0			0	0	Blue sky	
Bombay	29.77	756.0	29.80	757.0	86.0	30.0	72	NNW	25	11.2			0			0	0	Blue sky	
Poona	27.84	707.2	29.82	757.4	84.4	29.1	60	N					10		N	0	0	Overcast	
Lahore	29.02	737.0	29.75	755.6	88.1	31.2	43	Calm	0.7	0.3						0	0	Blue sky	
Belgaum	27.31	693.6	29.83	757.7	78.3	25.7	81	WSW	14	6.3			8		ENE			Showery	
Roorkee	28.85	732.9	29.75	755.6	79.8	26.6	56	Calm	2	0.9						0	0		
Agra	29.21	741.9	29.76	755.9	91.7	33.2	43	N								0	0		
Nagpur	28.76	730.4	29.78	756.5	86.6	30.3	48	Calm	3.5	1.6			4		S	0	0	D. clouds	
Lucknow	29.39	746.4	29.76	755.8	84.8	29.3	45	Calm	0.7	0.3						0	0	Blue sky	
Allahabad	29.44	747.8	29.75	755.7	80.1	26.7	58	Calm	1.8	0.8			0			0	0	Blue sky	
Patna	29.56	750.9	29.74	755.5	82.7	28.2	74	Calm	0.1	0.04			2	E	E	0	0		
Hazaribagh	27.77	705.4	29.79	756.6	77.0	25.0	52	NW	4.9	2.2			0			0	0	Blue sky	
Cuttack	29.69	754.0	29.77	756.0	88.6	31.4	66	Calm	1.1	0.5						0	0	Blue sky	
Calcutta (Alipore)	29.73	755.0	29.75	755.6	81.5	27.7	79	NE	8	3.6			4		W	0	0	D. clouds	
Goalpara	29.36	745.8	29.75	755.7	81.7	27.6	74	Calm	3.3	1.5			0			0	0	Blue sky	
Chittagong	29.70	754.4	29.79	756.7	81.1	27.3	89	Calm	4.6	2.1			2			0	0	Misty	
Sibsagar	29.45	748.1	29.79	756.6	79.2	26.2	81	ENE	2.5	1.1			10	W	W	0.17	4.3	D; clouds	
Jubbulpore	28.45	722.6	29.81	757.2	80.8	27.1	74	Calm	1.5	0.7			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.71	754.7	30.12	765.1	63.7	17.6	79	E	0.7	0.3	.....	.....	10	.....	.....	0.110	2.8	.....	Prof. Giovanni Clodig.
Padua	30.00	762.0	30.11	764.8	66.2	19.0	73	W	0.7	0.3	.....	.....	10	NNW	.....	0.134	3.4	.....	Prof. Dott. Lorenzoni
Vicenza	29.91	759.8	30.11	764.7	66.6	19.2	72	SSW	0.7	0.3	.....	.....	5	S	.....	0.283	7.2	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.57	751.1	30.08	764.1	64.8	18.2	79	E	.....	.....	2	.....	5	NNW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.20	741.6	30.10	764.6	63.1	17.3	75	SSE	?	?	.....	.....	8	N	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.8	30.09	764.2	61.0	16.1	76	W	.....	.....	4	.....	7	E	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.86	758.4	30.08	764.0	69.6	20.9	70	SW	.....	.....	2	.....	8	.....	.....	1.532	38.9	.....	Prof. L. Vassallo.
Genoa	29.91	759.7	30.08	763.9	67.8	19.9	65	SE	8.1	3.6	.....	.....	6	E	.....	0.626	15.9	.....	Prof. G. M. Garibaldi.
Parma	29.80	756.9	30.11	764.9	65.1	18.4	77	ESE	.....	.....	2	.....	10	.....	.....	0.244	6.2	.....	Prof. P. Pigorini.
Florence	29.86	758.4	30.11	764.8	72.1	22.3	61	NNW	.....	.....	2	.....	10	S	.....	0	0	.....	Cav. F Meucci
Leghorn	29.97	761.3	30.06	763.5	71.2	21.8	64	SW	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.04	763.1	30.09	764.3	72.0	22.7	58	S	8.1	3.6	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.59	726.1	30.13	765.2	66.2	19.0	61	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.93	761 4	30.15	765.8	72.9	22.7	74	SW	8.1	3.6	.....	.....	9	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.96	760.9	30.15	765.9	72.9	22.7	68	NNW	.....	.....	2	.....	5	WNW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.88	758.9	30.13	765.2	70.6	21.4	74	NNW	1.3	0.6	.....	.....	6	ENE	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.92	759.9	30.11	764.7	74.8	23.8	60	SE	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.20	743.3	30.13	765.4	74.1	23.4	72	SW	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.91	759.6	30.16	766.0	71.1	21.7	69	NE	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.09	764.2	30.16	766.0	72.3	22.4	67	NE	8.7	3.9	.....	.....	3	WNW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.89	759.2	30.09	764.3	65.7	18.7	68	N	4.2	1.9	.....	.....	8c;ck	W	.....	0	0	Fair	
Tokei (Yeddo) Observatory	29.90	759.4	29.97	761.2	58.5	14.7	90	NE	3.5	1.6	.....	.....	10ck;ka	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	67.1	19.5	91	NE	.....	.....	1	0	10n	.....	SE	0	0	Very cloudy	P. Ceballos.
Guadalajara	25.09	637.2	30.05	763.2	59.0	15.0	75	SE	.....	.....	1	.....	10	.....	W	0.016	0.4	Covered	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.44	620.8	29.98	761.6	62.6	17.0	86	SE	.....	.....	1	4c	4n	Calm	Calm	0.125	3.14	½ cloudy	Prof. M. Leal.
Mexico	23.15	587.9	30.14	765.6	55.4	13.0	90	Calm	0	0	.....	2c	4k	E	.....	0	0	Light fog	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	62.6	17.0	91	Calm	.....	.....	0	3c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. R. Gonzalez.
Tlacotalpam	29.84	758.0	29.85	758.3	79.5	26.4	92	SSW	.....	.....	1	7	0	NE	.....	Inap.	Inap.	½ cloudy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.14	765.6	61.0	16.1	64	ESE	.....	.....	.....	.....	9	.....	ESE	0	0	Misty	G. Barroeta, M. D.
Vera-Cruz	29.93	760.3	29.96	761.0	80.6	27.0	84	NW	.....	.....	.....	2ck	6sk	.....	.....	0	0	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.3	30.08	764.1	52.9	11.6	93	NNW	.....	.....	.....	.....	10	.....	SE	0.822	20.90	Covered	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.37	720.5	30.00	761.9	77.9	25.5	55	E	0.8	0.4	.....	0	6	.....	E	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,536.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.94	760.5	29.91	760.5	60.1	15.6	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.181	4.6	.....	
Groningen	29.75	755.7	29.81	757.1	55.2	12.9	.....	SW	.....	.....	4	.....	.....	.....	.....	0.697	17.7	.....	
Helder	29.80	756 8	29.80	756 8	57.2	14.0	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.106	2.7	.....	
Hellevoetsluis	29.80	756.1	29.89	759.1	57.6	14 2	83	WSW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.82	757.4	29.87	758.6	54.1	12.3	93	SW	.....	.....	5	.....	5	.....	.....	0.048	1.1	Cloudy	H. v d Brink.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter; at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.13	739.9	29.19	741.3	57.9	14.4	67	S	9.4	4.2	.....	.....	10	.....	.....	1.232	31.3	Raining	
Bröno	29.39	746.4	29.43	747.4	54.0	12.2	72	S	25	11	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.32	744.7	29.47	748.4	55.2	12.9	93	SSE	9	4	.....	.....	10	.....	.....	0.110	2.8	Raining	
Tromsö	29.64	750.2	29.58	751.3	39.2	4.0	73	Calm	0	0	.....	.....	2	.....	.....	0.157	4.0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.04	763.0	30.23	767.3	67.5	19.7	74	N	3.8	1.7	.....	.....	1	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	29.10	739.1	30.11	764.7	70.5	21.4	38	N	1.3	0.6	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.11	764.7	30.19	766.9	74.5	23.6	54	SW	6.3	2.8	.....	.....	9	.....	.....	0.004	0.1	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	756.9	30.15	765.9	65.3	18.5	43	NNW	4.9	2.2	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.18	766.5	30.25	768.3	71.6	22.0	68	NNE	10.5	4.7	.....	.....	4	.....	.....	0.031	0.8	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	D. Clouds	L. Ribeiro da Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Knoplo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Baredona, Met. Obs'y	30.06	763.4	30.16	766.0	69.3	20.7	54	ENE	1.4	0.64	.....	.....	7ck	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.09	764.2	30.14	765.6	73.0	22.8	55	E	2.0	0.88	.....	3	1	SE	.....	0.020	0.5	Cloudy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.19	690.7	.....	.....	61.9	16.6	64	W	5.1	2.29	.....	.....	.....	.....	.....	0	0	Clear.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.91	709.0	30.08	764.1	71.6	22.0	91	SE	3.7	1.67	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.98	761.5	30.13	765.2	77.0	25.0	62	SW	4.2	1.89	.....	4	4	N	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.18	741.1	30.07	763.6	62.8	17.1	66	SE	6.8	3.06	.....	6	1	.....	.....	0.012	0.3	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.88	758.9	29.94	760.5	78.3	25.7	89	Calm	0	0	.....	10pc	8k	.....	.....	0.110	2.8	Cloudy.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.00	761.9	30.09	764.4	74.8	23.8	47	SSW	10.3	4.6	.....	0	5	.....	SW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.82	757.5	29.91	759.8	79.9	26.6	92	SE	5.6	2.50	.....	7k	8k	SE	SE	0.010	0.25	Cloudy.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 890 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.78	756.5	29.82	757.5	41.0	5.0	.....	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	
Umea	29.72	755.0	29.78	756.3	44.6	7.0	100	S	.....	.....	2	.....	10	.....	.....	0.205	5.2	.....	
Hernosand	29.64	752.9	29.69	754.2	48.9	9.4	98	Calm	.....	.....	0	.....	10	.....	.....	0.024	0.6	Raining	
Stockholm	29.63	750.1	29.71	754.6	55.4	13.0	90	SSW	.....	.....	2	.....	9	.....	.....	0.020	0.5	.....	
Wisby	29.67	753.7	29.73	755.2	59.4	15.2	76	SSW	.....	.....	6	.....	8	.....	.....	0.012	0.3	.....	
Sub-Series.																			
Upsala	29.61	752.0	29.68	753.9	53.2	11.8	96	S	.....	.....	.....	.....	7	.....	.....	0.017	0.42	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.8	30.17	766.4	63.1	17.3	48	SE	.....	.....	3	.....	5	.....	.....	0.319	8.1	Cloudy	The Observatory.
Zurich	28.54	724.8	30.17	766.2	56.8	13.8	69	W	.....	.....	2	.....	6	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.6 mm.; Thermometer, +3.7 cent.; Relative Humidity, —23 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.11	764.9	66.4	19.1	60	ENE	12	5.5	.....	.....	1	.....	ENE	0	0	.....	The Observatory.
Valona	.....	.....	30.21	767.2	71.8	22.1	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.98	761.6	29.98	761.6	79.0	26.1	55	WNW	.....	.....	2	.....	3k	.....	E; W	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.79	756.7	30.08	764.0	44	6.7	.....	Calm	0	0	.....	.....	8s	.....	NW	0	0	Cloudy	W. R. Bigg.
*Chatham, N B	30.08	764.0	30.14	765.5	39	3.9	77	N	7	3.1	.....	8ck	2ks	NW	NW	0.04	1.0	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.99	761.7	30.03	762.7	44	6.7	80	N	16	7.2	.....	.....	8n	.....	Calm	0.275	6.99	Sprinkling	H. J. Cundall, C. E.
Cornwall, Ontario	29.88	758.9	30.08	764.0	46.6	8.1	88	NW	.....	.....	1	.....	8s	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.00	762.0	30.16	766.1	.....	.....	.....	W	.....	.....	2	.....	.....	.....	.....	0.07	1.8	Cloudy	H. A. Johnson.
Esquimault, B. C	29.80	756.9	29.85	758.2	49.8	9.6	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.11	2.8	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.18	765.3	30.16	766.1	41	5.0	78	NE	11	4.9	.....	2k	5ks	NE	Calm	0.09	0.5	Fair	J. McWilliams.
Fredericton, N. B	30.10	764.5	30.16	766.1	40.1	4.5	82	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
*Fort Garry Manitoba	28.88	733.5	29.74	755.4	20	— 3.3	95	W	6	2.7	.....	0	0	.....	.....	0.170	4.32	Clear	James Stewart.
Granton, Ontario	28.84	732.5	29.94	760.5	45	7.2	100	E	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	James Grant.
*Halifax, N. S	29.81	757.2	29.95	760.7	45	7.2	84	N	10	4.5	.....	.....	10n	.....	N	0.020	0.51	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.04	752.8	30.02	762.5	43.5	6.4	89	SW	.....	.....	1	6c	0	.....	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.04	752.8	29.66	753.4	40	4.4	82	NE	.....	.....	6	10	3ks	.....	.....	1.00	25.4	Cloudy	E. Weedon.
*Kingston, Ontario	29.74	755.4	30.09	764.3	44	6.7	89	E	5	2.2	.....	2c	0	Calm	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.87	758.7	29.91	759.7	46.4	8.0	78	NE	16	7.2	.....	7k	0	NE	.....	0.10	2.5	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.91	759.4	30.11	764.8	46	7.8	87	E	4	1.8	.....	0	5s	.....	NE	0	0	Foggy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.31	744.5	30.01	762.2	43	6.1	86	SE	11	4.9	.....	2ck	5ks	SW	SW	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.28	743.7	30.05	763.3	37.6	3.1	91	Calm	.....	.....	0	2k	.....	.....	.....	0	0	.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.29	744.0	29.98	761.5	52	11.1	86	Calm	0	0	.....	5ck	0	S	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	29.89	759.2	29.94	760.5	47.6	8.7	.....	NW	4	1.8	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.31	744.5	29.95	760.7	54	12.2	75	E	16	7.2	.....	5ck	5s	SW	SE	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.83	757.7	30.16	766.1	40	4.4	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.69	751.6	30.06	763.5	35	1.7	97	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	30.07	763.8	30.13	765.3	42	5.6	74	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	29.95	760.7	30.12	765.0	43	6.1	67	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.24	742.7	29.96	761.0	46	7.8	83	SE	11	4.9	.....	.....	10ks	.....	W	0	0	Cloudy	K. Stewart.
Stayner, Ontario	29.22	742.2	30.01	762.2	41	5.0	91	SE	0	2.7	.....	5ck	0	W	.....	0	0	Fair	R. J. Cole.
Stratford, Ontario	28.68	728.5	29.98	761.5	43.3	6.3	97	SE	8.0	3.6	.....	.....	9s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
*Sydney, C. B	29.89	759.2	29.92	760.0	45	7.2	81	N	8	3.6	.....	.....	10n	.....	N	0.09	2.3	Light rain	T. C. Hill.
*Toronto, Ontario	29.65	753.1	30.03	762.7	40	9.4	72	SE	6	2.7	.....	0	5ks	.....	SE	0	0	Fair	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	43	6.1	92	NE	.....	.....	.....	5k	5s	.....	.....	0.50	12.7	Cloudy	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,192 ft., or 363.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.88	758.9	30.11	764.8	44	6.7	92	Calm	0	0		5c	Fog	Calm		0	0	Fair	
Alpena, Michigan	29.19	741.4	29.83	757.7	49	9.4	85	S	12	5.4			10n		Calm	0.16	4.1	Light rain	
Atlanta, Georgia	28.76	730.5	29.87	758.7	62	16.7	94	N	6	2.7			10s		N	0.15	3.8	Cloudy	
Atlantic City, New Jersey	30.02	762.5	30.03	762.7	59	15.0	70	NE	12	5.4			10s		NE	0	0	Cloudy	
Augusta, Georgia	29.68	753.9	29.86	758.4	68	20.0	89	Calm	0	0		0	8ks		N	0.48	12.2	Cloudy	
Baltimore, Maryland	30.00	762.0	30.05	763.3	52	11.1	54	NE	8	3.6			10s		NE	0	0	Cloudy	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	58	14.4	64	E	10	4.5			10s		E	0	0	Cloudy	
Bismarck, Dakota	28.08	713.2	29.94	760.5	34	1.1	79	SW	2	0.9		1cs	0	Calm		0.12	3.0	Clear	
Boerne, Texas	28.56	725.4			75	23.9	77	W	4	1.8		0	0			0	0	Clear	
Boise City, Idaho	27.17	690.1	30.13	765.3	37	2.8	80	S	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.98	761.5	30.14	765.5	50	10.0	72	N	8	3.6		8cs;k	Haze	W;E	Calm	0	0	Fair	
Brackettville, Texas	28.81	731.8	29.80	756.9	69	20.6	90	E	5	2.2		0	0			0	0	Clear	
Breckenridge, Minnesota	28.86	733.0	29.88	758.9	37	2.8	71	W	12	5.4		0	0			0	0	Clear	
Brownsville, Texas	29.87	758.7	29.94	760.5	73	22.8	95	Calm	0	0		2k	0	Calm		0	0	Clear	
Buffalo, New York	29.29	744.0	29.99	761.7	42	5.6	83	NE	6	2.7		5c	0	SW		0	0	Fair	
Burkes, Arizona					63	17.2	Inap.	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.89	759.2	30.15	765.8	46	7.8	84	Calm	0	0		1k	0	Calm		0.01	0.3	Clear	
Cairo, Illinois	29.50	749.3	29.88	758.9	64	17.8	94	W	3	1.3			Fog		Calm	0.01	0.3	Foggy	
Camp Apache, Arizona	25.23	640.8	30.23	767.8	39	3.9	47	NE			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.24	641.1	30.04	763.0	58	14.4	22	NW			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.85	682.0	30.34	770.6	42	5.6	50	NE			1	0	0			0	0	Clear	
Campo, California	27.46	697.5	30.03	762.7	39	3.9	63	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.81	757.9	29.85	758.2	68	20.0	90	NE	35	15.6			10n		NE	0.76	19.3	Light rain	
Cape Henry, Virginia	29.92	760.0	29.94	760.5	59	15.0	94	NE	20	8.9			10n		NE	0.14	3.6	Light rain	
Cape Lookout, N. Carolina	29.76	755.9	29.77	756.1	69	20.6	100	NE	42	18.8			10n		NE	1.16	29.2	Heavy rain	
Cape May, New Jersey	30.00	762.0	30.03	762.7	52	11.1	79	NE	10	4.5			10s		W	0	0	Cloudy	
Castroville, Texas	29.16	740.7	29.83	757.7	74	23 3	95	Calm	0	0			10s	Calm		0	0	Cloudy	
Charleston, South Carolina	29.73	755.1	29.79	756.7	68	20.0	95	NW	12	5.4			10s		N	2.23	56.6	Cloudy	
Cheyenne, Wyoming	24.14	613.1	30 08	764.0	37	2.8	31	SW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.25	742.9	29.94	760.5	51	10.6	72	N	8	3.6		8ck	0	W		0.02	0.5	Fair	
Cincinnati, Ohio	29.29	744.0	29.93	760.2	58	14.4	73	SE	1	0.4		8k	2s	W	Calm	0	0	Cloudy	
Cleveland, Ohio	29.22	742.2	29.95	760.7	46	7.8	69	S	8	3.6		2ck	8ks	Calm	W	0.03	0.8	Cloudy	
Coleman City, Texas	28.20	716.3	29.84	757.9	60	15.6	55	NW	8	3.6		0	0			0	0	Clear	
Columbus, Ohio	29.07	738.4	29.90	759.4	51	10.6	78	W	1	0.4			10ks	Calm		0	0	Cloudy	
Concho, Texas	28.08	713.2	29.72	754.9	63	17.2	61	NE	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.45	748.0	29.90	759.4	71	21.7	95	S	8	3.6		0	0			0	0	Clear	
Davenport, Iowa	29.42	747.3	30.06	763.5	48	8.9	78	Calm	0	0		0	Sm'c		Calm	0.93	23.6	Clear	
Decatur, Texas	28.80	731 5	29.93	760.2	67	19.4	89	N	20	8.9			10s			0	0	Cloudy	
Denison, Texas	29.18	741 2	29.96	761.0	68	20.0	90	NE	9	4.0		10k	0	NE		0	0	Cloudy	
Denver, Colorado	24.91	632.7	30.13	765.3	40	4.4	31	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.22	742.2	30.12	765.0	41	5.0	91	Calm	0	0		0	Fog		Calm	0.85	21.6	Foggy	
Detroit, Michigan	29.22	742.2	29.88	758.9	53	11.7	73	S	6	2.7			10s		SW	0	0	Cloudy	
Dodge City, Kansas	27.61	701.3	29.98	761.5	37	2.8	63	N	1	0.4		0	0			0	0	Clear	
Dubuque, Iowa	29.34	745.2	30.04	763.0	45	7.2	76	NW	1	0.4		0	Fog		Calm	0.48	12.2	Foggy	
Duluth, Minnesota	29.14	740.1	29.82	757.4	44	6.7	76	SW	10	4.5		0	0			0.53	13.5	Clear	
Eagle Pass, Texas	29.18	741.2	29.90	759.4	63	17.2	89	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	30.07	763.8	30.14	765.5	43	6.1	75	NE	11	4.9		0	0			0	0	Clear	
Edinburg, Texas					75	23.9	95	Calm			0		Fog			0	0	Foggy	
El Paso, Texas					67	19.4	45	W	3	1.3		0	0			0	0	Clear	
Erie, Pennsylvania	29.24	742.7	29.94	760.5	50	10.0	65	S	12	5.4		2c	0	W		0	0	Fair	
Escanaba, Michigan	29.19	741.4	29.89	759.2	44	6.7	84	SW	7	3.1		5ck	0	SW		Inap.	Inap.	Fair	
Florence, Arizona	28.46	722.9	30.06	763.5	60	15.6	44	W			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.65	651.5	29.71	754.6	53	11.7	24	NW	8	3.6		0	0			0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	56	13.3	53	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.50	749.3	30.03	762.7	60	15.6	65	NE	4	1.8		0	Haze		Calm	0	0	Clear	
Fort Griffin, Texas	28.74	730.0	29.98	761.5	65	18.3	68	N	12	5.4			10s		NE	0	0	Cloudy	
Fort McKavett, Texas	27.81	706.4	29.66	753.4	70	21.1	70	N	4	1.8		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.85	732.8	29.95	760.7	68	14.4	63	N	16	7.2		0	Haze			0	0	Hazy	
Fredericksburg, Texas	28.23	717.0	29.72	754.9	77	25.0	69	Calm	0	0		0	5ks		Calm	0	0	Fair	
Galveston, Texas	29.92	760.0	29.96	761.0	77	25.0	86	S	3	1.3		5k	0	Calm		0	0	Fair	
Graham, Texas	28.86	733.5	29.90	759.4	68	20.0	90	N	12	5.4			10s		NE	0	0	Cloudy	
Grand Haven, Michigan	29.30	744.2	29.94	760.5	50	10.0	72	N	16	7.2			10n		Calm	0.12	3.0	Light rain	
Indianapolis, Indiana	29.10	739.1	29.86	758.4	59	15.0	76	SE	2	0.9			10s		Calm	0	0	Cloudy	
Indianola, Texas	29.93	760.2	29.95	760.7	78	25.6	91	SW	7	3.1		1k	0	SW		0	0	Clear	
Jacksboro, Texas	28.80	731.5	29.90	759.4	67	19.4	89	NE	12	5.4		0	10n		NE	0	0	Cloudy	
Jacksonville, Florida	29.81	757.2	29.83	757.7	70	21.1	90	N	8	3.6			10s		N	2.16	54.9	Cloudy	
Keokuk, Iowa	29.13	747.5	30.04	763.0	50	10.0	72	N	6	2.7		0	0			0.80	20.3	Clear	
Key West, Florida	29.89	759.2	29.92	760.0	82	27.8	79	SW	7	3.1		5cs	1ks	W	Calm	0	0	Fair	
Kittyhawk, North Carolina	29.88	758.9	29.90	759.4	63	17.2	94	E	27	12.1			10n		E	0.25	6.3	Light rain	
Knoxville, Tennessee	29.92	734.6	29.90	759.4	63	17.2	94	Calm	0	0			10s		Calm	1.10	27.9	Cloudy	
La Crosse, Wisconsin	29.24	742.7	29.98	761.5	46	7.8	78	SW	6	2.7		0	0			0.20	5.1	Clear	
La Mesilla, New Mexico	26.16	664.4	30.31	769.9	45	7.2	60	NE	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.49	749.0	29.82	757.4	76	24 4	86	SE	3	1.3		0	0			0	0	Clear	
Lead City, Dakota	24.80	629.9	30.07	763.8	44	6.7	37	SW	9	4.0		5k	0	Calm		0.02	0.5	Fair	
Leavenworth, Kansas	29.27	743.4	30.12	765.0	50	10.0	79	Calm	0	0		0	0			0.50	12.7	Clear	
Los Angeles, California	29.68	753.9	30.02	762.5	55	12.8	93	N	1	0.4			Fog		Calm	0	0	Foggy	
Louisville, Kentucky	29.34	745.2	29.88	758.9	60	15.6	77	NE	2	0.9			10s;8m		Calm	Inap	Inap.	Cloudy	
Lynchburg, Virginia	29.35	745.5	30.02	762.5	57	13.9	69	NE	2	0.9			10ks		Calm	0	0	Threatening	
Madison, Wisconsin	28.98	736.1	29.97	761.2	46	7.8	69	NW	16	7.2		0	0			0.52	13.2	Clear	
Marquette, Michigan	29.04	737.6	29.73	755.1	46	7.8	69	SW	4	1.8		0	0			0.38	9.1	Clear	
Mason, Texas	28.32	719.3	30.02	762.5	69	20.6	84	SW	4	1.8		0	0			0	0	Clear	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.24	742.7	29.97	761.2	47	8.3	70	NW	11	4.9		1c	2s	Calm	Calm	0.08	2.0	Fair	
Mobile, Alabama	29.92	760.0	29.96	761.0	69	20.6	87	N	5	2.2			10s		N	Inap.	Inap.	Cloudy	
Montgomery, Alabama	29.71	754.6	29.94	760.5	68	20.0	94	E	1	0.4			10s	Calm		0.20	5.1	Cloudy	
Morgantown, West Virginia	28.85	732.8	29.89	759.2	62	11.1	73	N	2	0.9		10ck;cs	0	Calm		0	0	Cloudy	
Mt. Washington, N. H.	23.83	605.3	30.19	766.8	23	— 5.0	73	NW	5	2.2		0	2s		NW	0	0	Clear	
Nashville, Tennessee	29.39	746.5	29.91	759.7	65	18.3	94	SW	1	0.4			10s		W	0.03	0.8	Cloudy	
New Haven, Connecticut	30.01	762.2	30.13	765.3	46	7.8	77	NE	9	4.0		5cs	0	Calm		0	0	Fair	
New London, Connecticut	30.07	763.8	30.12	765.0	49	9.4	78	N	6	3.6		5cs	1s	W	E	0	0	Fair	
New Orleans, Louisiana	29.89	759.2	29.95	760.7	70	21.1	90	NW	2	0.9		0	Haze		Calm	0	0	Clear	
Newport, Rhode Island	30.08	764.0	30.13	765.3	51	10.6	72	N	4	1.8		8k	0	E		0	0	Cloudy	
New York, New York	29.94	760.5	30.12	765.0	51	10.6	65	N	8	3.6		10cs	0	Calm		0	0	Cloudy	
Norfolk, Virginia	29.92	760.0	29.98	761.5	57	13.9	100	NE	5	2.2			10n		Calm	0.16	3.8	Light rain	
North Platte, Nebraska	27.26	692.4	29.96	761.0	29	— 1.7	78	NW	3	1.3		0	0			0	0	Clear	
Olympia, Washington Ter.	29.84	757.9	29.88	758.9	45	7.2	92	S	3	1.3		0	5s		S	0.52	13.2	Fair	
Omaha, Nebraska	29.01	736.8	30.12	765.0	41	5.0	65	W	4	1.8		0	0			0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.76	755.9	30.00	764.3	46	7.8	84	S	6	2.7	.....	8c	0	W	.....	0	0	Fair	
Pembina, Dakota	28.89	733.8	29.74	755.4	31	— 0.6	89	W	5	2.2	.....	0	0	.....	.....	0.56	14.2	Clear	
Philadelphia, Pa	30.03	762.7	30.08	764.0	49	9.4	71	NE	13	5.8	.....	1cs	8ks;hs	Calm	E;Calm	0	0	Cloudy	
Phœnix, Arizona	28.82	732.0	.....	.....	60	15.6	39	SE	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.96	464.8	30.18	766.6	25	— 3.9	14	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.15	613.4	29.92	760.0	43	6.1	43	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.13	739.9	29.94	760.5	47	8.3	77	E	5	2.2	.....	8c;k	0	Calm	.....	0	0	Fair	
Port Huron, Michigan	29.26	742.9	29.91	759.7	50	10.1	72	S	2	0.9	.....	.....	10ks	.....	Calm	0.04	1.0	Cloudy	
Portland, Maine	30.10	764.5	30.14	765.5	48	8.9	70	NW	4	1.8	.....	1k	0	Calm	.....	0	0	Clear	
Portland, Oregon	29.87	758.7	29.98	761.5	53	11.7	93	S	7	3.1	.....	.....	10n	.....	S	0.04	1.0	Light rain	
Prescott, Arizona	24.87	631.7	30.23	767.8	41	5.0	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.18	741.2	29.98	761.5	68	20.0	94	N	6	2.7	.....	0	0	.....	.....	0	0	Hazy	
Punta Rassa, Florida	29.89	759.2	29.90	759.4	81	27.2	83	SW	14	6.3	.....	2ck	5ks	SW	SW	0	0	Fair	
Red Bluff, California	29.02	752.3	29.98	761.5	52	11.1	48	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.77	756.1	29.98	761.5	76	24.4	81	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.41	747.0	30.03	762.7	44	6.7	76	SE	6	2.7	.....	5cs	Haze	W	Calm	0	0	Fair	
Roseburg, Oregon	29.46	748.3	30.03	762.7	48	8.1	96	Calm	0	0	.....	5cs	0	SW	.....	0	0	Fair	
Sacramento, California	29.89	759.2	29.97	761.2	53	11.7	80	S	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.41	747.0	29.97	761.2	59	15.0	59	N	16	7.2	.....	0	5s	.....	Calm	Inap.	Inap.	Fair	
St. Marks, Florida	29.88	758.9	29.89	759.2	68	20.0	95	NW	4	1.8	.....	.....	10s	.....	NW	2.03	66.8	Cloudy	
St. Paul, Minnesota	29.08	738.6	29.92	760.0	39	3.9	71	SW	14	6.3	.....	0	0	.....	.....	0.29	7.4	Clear	
Salt Lake City, Utah	25.74	653.8	30.07	763.8	43.0	6.1	59	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.28	743.7	29.84	757.9	75.	23.9	90	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Diego, California	29.97	761.2	30.04	763.0	60	15.6	88	N	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.27	743.4	29.94	760.5	51	10.6	72	S	5	2.2	.....	5cs	5ks	Calm	Calm	0	0	Threatening	
Sandy Hook, New Jersey	30.06	763.5	30.09	764.3	54	12.2	67	E	23	10.3	.....	5cs	2ks	E	E	0	0	Cloudy	
San Francisco, California	29.98	761.5	30.04	763.0	54	12.2	80	SW	5	2.2	.....	5k	0	SW	.....	0	0	Fair	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	46	7.8	26	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.74	755.4	29.82	757.4	68	20.0	95	NW	10	4.5	.....	.....	10s	.....	NW	1.52	38.6	Cloudy	
Shreveport, Louisiana	29.76	755.9	29.97	761.2	70	21.1	95	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Silver City, New Mexico	24.38	619.2	.....	.....	43	6.1	75	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.69	754.1	29.73	755.1	67	19.4	100	NE	16	7.2	.....	.....	10n	.....	NE	1.91	48.5	Heavy rain	
Springfield, Massachusetts	30.01	762.2	30.15	765.8	48	8.9	70	Calm	0	0	.....	8c	0	NW	.....	0	0	Fair	
Stockton, Texas	27.00	685.8	30.00	762.0	59	15.0	48	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.10	764.5	30.15	765.8	53	11.7	67	E	19	8.5	.....	5c;k	0	NW;NE	.....	0	0	Fair	
Toledo, Ohio,	29.24	742.7	29.91	759.7	52	11.1	73	E	2	0.9	.....	.....	10ks	.....	NW	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	68	20.0	56	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.78	756.4	29.81	757.2	69	20.6	95	NW	19	8.5	.....	.....	10ks	.....	NW	2.76	70.1	Clearing	
Umatilla, Oregon	29.69	751.6	.....	.....	52	11.1	79	E	4	1.8	.....	.....	10ks	.....	Calm	0.01	0.3	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	42	5.6	100	SW	.....	.....	2	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.07	738.4	29.87	758.7	73	22.8	90	NE	1	0.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.01	762.2	66	18.9	95	SE	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
Virginia City, Montana	24.26	616.2	29.74	755.4	42	5.6	58	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.66	753.4	30.03	762.7	49	9.4	93	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.93	760.2	30.05	763.3	51	10.6	79	NE	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	48	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.66	753.9	29.76	755.9	63	17.2	100	NE	14	6.3	.....	.....	10n	.....	Calm	1.47	37.3	Heavy rain	
Winnemucca, Nevada	25.06	651.8	30.02	762.5	33	0.6	61	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.06	763.5	30.11	764.8	50	10.0	86	N	4	1.8	.....	5cs	5ks	SW	.....	0	0	Cloudy	
Yankton, Dakota	28.83	732.3	30.16	766.1	35	1.7	74	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.72	754.9	29.89	759.2	66	18.9	52	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.88	758.9	29.93	760.2	19.5	— 6.9	100	S	14	6.3	.....	.....	10n	.....	S	0.03	0.8	Snowing	J. Fortescue, W. Wrod
Havana, Cuba, W. I	29.92	760.0	29.94	760.5	82	27.8	83	Calm	0	0	.....	10c	2ks	Calm	Calm	0.21	5.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.90	759.4	29.93	760.2	80	26.7	82	Calm	0	0	.....	8c	4k	N	NE	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	88	31.1	80	NE	1	0.4	.....	2c	5ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.08	764.0	30.09	764.3	82	27.8	87	Calm	0	0	.....	5c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.84	757.9	29.82	760.0	84	28.9	.....	NE	2.9	1.3	.....	.....	.....	.....	.....	Inap.	Inap.	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	84	28.9	75	E	.....	.....	2	0	5k	.....	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A	25.23	640.8	.....	.....	68.5	20.3	78	Calm	0	0	.....	1cs	1ks	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I	29.74	755.4	30.05	763.3	75	23.9	85	NE	.....	.....	.....	c	.....	.....	.....	.....	.....	Fine	Robert Elworthy.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,383 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,478.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 539.4 (?) m.; Decatur, 1,160 (?) ft., or 365.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,014 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.69 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.04	763.0	72	22.2	72	22.2	90	NW	2	0.9	.....	.....	10	.....	NE	4.10	104.1	.....	.....	Threatening	
Navy Yard, Portsmouth, N.H	30.18‡?	766.6‡?	.....	.....	47	8.3	77	NNE	4	1.8	.....	.....	2?	.....	.....	0	0	.....	.....	Cloudy?	
Naval Hospital, Yokohama, Japan	29.93*	760.2*	65	18.3	60.2	15.7	97	NW	.....	.....	1	.....	Sn;ck	.....	WSW	0.02	0.5	.....	.....	Clearing	
Adams. S. 39° 02′, W. 82° 09′	30.30	769.8	61	16.1	54	12.2	93	NNW	.....	.....	4–5	.....	10	.....	NNW	.....	.....	Mod'ate	NNW	Cloudy	
Alaska, S. 24° 40′ W. 74° 12′	30.15	765.8	63	17.2	60	15.6	88	SSE	.....	.....	4	.....	0	.....	.....	0	0	Long	S	Blue sky	
Alliance, Smyrna, Turkey	30.02‡	762.5‡	.....	.....	71	21.7	66	W	.....	.....	3–4	.....	0	.....	.....	.....	.....	Light	W	Clear	
Ashuelot. N. 34° 24′, E. 134° 13′	30.12	765.0	70	21.1	68	20.0	65	NNW	.....	.....	5	.....	10	.....	W	.....	.....	Smooth	.....	Squally	
Canonicus, New Orleans, La	30.02	762.5	52	11.1	71	21.7	90	NE	.....	.....	3	.....	4	.....	.....	.....	.....	.....	.....	Fair	
Colorado, New York, N. Y	30.11‡	764.8‡	.....	.....	51	10.6	72	NE	9	4.0	.....	.....	8	.....	NE	0	0	.....	.....	Light fog	
Constitution, Havre, France	.....	.....	.....	.....	57	13.9	87	SW	.....	.....	4	.....	5	.....	E	.....	.....	.....	.....	Pleasant	
Despatch, Constantinople, Turkey	30.10‡	764.5‡	.....	.....	71	21.7	68	NE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, S. 37° 25′, W. 8° 15′	30.30	769.6	58	14.4	58	14.4	100	N	.....	.....	6	.....	2	.....	NNE	.....	.....	Smooth	NE	Clear	
Franklin, Norfolk, Va	30.06	763.5	67	19.4	60	15.6	100	NE	4.8	2.1	.....	.....	10	.....	NE	1.	25.	.....	.....	Raining	
Gettysburg N. 32° 59′, E. 26° 27′	29.98‡	761.5‡	.....	.....	77	25.0	77	W	.....	.....	1	.....	9	.....	Calm	1.	25.	Light	E	Light rain	
Guard. S. 7° 51′, W. 32° 53′	30.10	764.5	81	27.2	81	27.2	70	ESE	.....	.....	5	.....	2	.....	E	.....	.....	Long	E	Clear	
Hartford, S. 24° 18′, W. 46° 16′	30.03	762.7	.....	.....	70	21.1	90	ENE	16.8	7.5	.....	.....	5	.....	ENE	0.03	0.8	Smooth	.....	Fair	
Marion, Trieste, Austria	30.10	764.5	68	20.0	65	18.3	78	Calm	.....	.....	0	.....	10	.....	Calm	Heavy	Heavy	.....	.....	Drizzling	
Michigan, Erie, Pa	29.98†	761.5†	.....	.....	48	8.9	70	SE	.....	.....	5	.....	2	.....	SE	.....	.....	.....	.....	Fair	
Monocacy, Yokohama, Japan	29.91‡	759.7‡	.....	.....	63	17.2	89	NNW	.....	.....	1	.....	10	.....	NNW	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C	29.96	761.0	71	21.7	69	20.6	95	NW	21	9.4	.....	.....	10	.....	N	1.3	33.	.....	.....	Cloudy	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	60	15.6	88	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.44	773.2	60	15.6	49	9.4	78	SSE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Fair	
Passaic, Washington, D. C	.....	.....	.....	.....	53	11.7	93	NE	.....	.....	1	.....	5	.....	E	.....	.....	.....	.....	Fair	
Plymouth. N. 34° 6′, W. 64° 11′	30.13	765.3	77	25.0	76	24.4	73	WSW	.....	.....	2	.....	2	.....	W	.....	.....	Light	N;W	Clear	
Powhatan, Portsmouth, N. H	30.10‡?	764.5‡?	.....	.....	50	10.0	72	NE	4.8	2.1	.....	.....	10?	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	30.13	765.3	83	28.3	83	28.3	83	SW	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Rio Bravo, Brownsville, Texas	29.88	758.9	75	23.9	75	23.9	95	Calm	.....	.....	0	.....	2	.....	S	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	29.98‡	761.5‡	.....	.....	55	12.8	68	NE	.....	.....	3	.....	10	.....	.....	0	0	.....	.....	Overcast	
Saratoga, Philadelphia, Pa	30.00	762.0	.....	.....	49	9.4	71	N	.....	.....	4	.....	10	.....	N	0	0	.....	.....	Overcast	
St. Louis, League Island, Pa	30.01	762.2	58	14.4	52	11.1	79	NNE	9	4.0	.....	.....	10	.....	NE	0	0	.....	.....	Cloudy	
Supply, Havre, France	30.13	765.3	62	16.7	60	15.6	71	WNW	.....	.....	3–4	.....	5	.....	WNW	.....	.....	.....	.....	Fair	
Swatara, Boston, Mass	30.12‡	765.0‡	.....	.....	52	11.1	86	N	.....	.....	2	.....	8	.....	NE	.....	.....	.....	.....	Cloudy	
Trenton, N. 36° 06′, W. 5° 58′	30.07‡	763.8‡	.....	.....	75	23.9	77	ESE	.....	.....	5	.....	2	.....	E	0	0	Smooth	.....	Clear	
Tuscarora. N. 33° 00′, W. 118° 21′	29.80	756.9	64	17.8	64	17.8	83	NW	.....	.....	1	.....	8	.....	Calm	0	0	Smooth	.....	Fair	
Vandalia, Gibraltar	30.12‡	765.0‡	.....	.....	69	20.6	80	ENE	.....	.....	2	.....	2	.....	ENE	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass	.....	.....	.....	.....	48	8.9	78	N	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Clear	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction from—		
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35° 42', W. 172° 02'		30.21*	767.3*	70	21.1	100	SE			4		10		SE		Small	SE	Overcast	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 7° 10', W. 81° 10'		29.94*	760.5*	80	26.7	100	WNW			3		5		WNW	0	Small	WSW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dutton, N. 47° 15', W. 124° 47'		29.87*	758.7*	55	12.8	68	SSW			3		3		SW	Blank	Heavy	WSW	Cloudy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 41° 40', W. 63° 00'		29.94*	760.5*	56	13.3	??	N			5		5k		WNW	0	High	W	Fair	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 31° 09', E. 180° 59'		30.10	764.5	78	22.8	67	Var.			2		8		W		Smooth		D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana. N. 41° 56′ W. 64°		30.04*	763.0*	58	14.4	100	N			2		8		NW	0	Rough	Cross	Clearing,	Captain Sargent.
S. S. Ohio. N. 50° 32′, W. 29° 44′		29.76	755.9	59	15.0	65	SW			3		9?		SW	Heavy	Heavy	SE	Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Laguayra, Venezuela		29.86	758.4	86	30.0	72	Calm	0	0			5k		E	0	Swell	NE	D. clouds	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 12, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.08	764.1	75.2	24.0	77	NW			5		2			0	0	Fair	Kesxuche.
Algiers			29.98	761.6	79.9	26.6	69	WSW			3		1			0	0	Very fair	Tourillere.
La Calle			30.00	762.0	79.2	26.2	76	NE			1		7			0.110	2.8	Very cloudy	Foufrede.
Tunis			30.02	762.5	84.9	29.4	50	NE			5		4			0	0	Cloudy	Jacques.
Sfax			30.16	766.0	78.8	26.0		ENE			5		0			0	0	Clear	Gau.
Saida			30.03	762.8	74.3	23.5	55	N			1		3			0	0	Pretty fair	Herbin.
Tebessa			30.06	763.4	81.3	27.4	35	W			6		4			Inap.	Inap.	Cloudy	Watrin.
Geriville			30.02	762.4	75.2	24.0	54	SSE			6		7			0	0	Very cloudy	Brugnlaux.
Laghouat			30.13	765.2	83.5	28.6	43	NW			5		2			0	0	Fair	Bertrand.
Biskra			30.11	764.7	88.2	31.2	40	SE			1		2			0	0	Fair	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.03	762.5	30.17	766.3	64.0	17.8	65	NE			1		8			0	0		Prof. Ivan Storir.
Cracow, I. R. Observatory	29.43	747.4	30.19	766.9	57.6	14.2	65				1		6			0	0		Dr. Wierzbiski
Eperies	29.26	743.2	30.13	765.2	62.2	16.8	69	Calm			0		8cs			0	0		Julius Mikolik.
Gratz	28.96	735.6	30.21	767.2	58.5	14.7	77	SSW			2		10			0.059	1.50		Andreas Rospini.
Hermannstadt	28.67	728.1	30.13	765.4	61.2	16.2	64	SE			2		6			0	0		Prof. A. Gottschling.
Kremsmünster	28.82	731.9	30.15	765.9	55.8	13.2	73	Calm			0		8			0	0		Prof. O. Wagner
Lemberg	29.17	740.9	30.15	765.8	59.0	15.0	62	NW			1		2			0	0		Dr. T. Stanecki.
Pola	30.02	762.4	30.13	765.2	69.4	20.8	68	SE			1		8ks			0.201	5.1		I.R.Hydrographic Office
Szathmar	29.70	754.4	30.16	766.0	68.0	20.0	61	NW			1		3			0.035	0.9		Julius Csics, S. J.
Szegedin	29.85	758.1	30.12	765.1	65.1	18.4		Calm			0		6			0.006	0.15		Karl Stancel.
Trieste	30.04	763.1	30.15	765.7	64.8	18.2	71	E			1		4			0	0	Almost cl'dy	P. Busin.
Vienna	29.52	749.8	30.24	768.0	59.0	15.0	63	E			1		6			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.75	730.3	30.28	769.0	52.3	11.3	62	W			2		10			0	0	Solar halo	Prof. M. Passau.
Brussels	30.03	762.8	30.24	768.0	54.5	12.5	76	W			3		10		NW	0	0		Royal Observatory
Furnes	30.26	768.6	30.28	769.2	58.1	14.5	69	WNW			2		4			0.004	0.1		M. E. de Cae.
Maeseyck	30.11	764.8	30.24	768.1	55.2	13.0	78	W			2		10			0	0		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.98	761.5	30.07	763.8	57.3	14.1	.....	WSW	13	5.8	.....	.....	2	.....	.....	0.050	1.27	Blue sky.....	W. Boswell.
Ardrossan	30.12	765.0	30.18	765.3	55	12.8	.....	SW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	George Carrick.
Armagh, Observatory	.....	.....	30.17	766.3	53.9	12.2	.....	SSW	13	5.8	.....	.....	6	.....	.....	.....	.....	D. clouds....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.22	767.6	56.4	13.6	.....	W	7	3.1	.....	.....	1	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.82	757.4	30.22	767.6	55.1	12.8	.....	SW	.....	.....	1	.....	4	.....	.....	0.13	3.3	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	83	28.3	.....	SE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	30.25	768.3	62.0	16.7	.....	NNW	.....	.....	1	.....	5	.....	.....	.....	.....	Hazy.....	H. Todd. [H.C.
Cardington	.....	.....	30.27	768.8	55.0	12.8	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	John McLaren.
Chatham, School M. E.	30.14	765.5	30.27	768.8	60.2	15.7	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Blue sky.....	Lt. G. W. Morris, R. E.
Dartmoor	28.78	731.0	30.27	768.8	50.6	10.3	.....	NW	.....	.....	1	.....	2	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	30.13	765.3	30.16	766.1	53	11.7	.....	WSW	.....	.....	4	.....	2	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	30.24	768.1	30.27	768.8	56	13.3	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	¾ clouded...	J. Costello.
Falmouth, Observatory	30.09	764.3	30.32	770.1	56.5	13.6	.....	SSE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	The Staff.
Fort Napier, (Natal)	27.48	698.0	29.79	756.7	62.6	17.0	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	83.5	28.6	.....	Calm	.....	.....	0	.....	4	.....	.....	.....	.....	Drizzling....	
Galway, Queen's College	.....	.....	30.08	764.0	57	13.9	.....	SSW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.00	762.0	30.05	763.3	.....	.....	.....	NW	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.93	760.2	30.13	765.3	54.8	12.7	.....	WSW	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Great Yarmouth	30.21	767.3	30.21	767.3	56	13.3	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds....	G. T. Watson.
Greenwich, Royal Obs'y	30.10	764.5	30.27	768.8	58.6	14.8	.....	NW	.....	.....	1	.....	6	.....	.....	.....	.....	Hazy.....	The Staff, for G. B. Airy.
Guernsey	30.08	764.0	30.29	769.4	58.5	14.7	.....	NE	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.31	769.9	59	15.0	.....	SW	.....	.....	1	.....	1clr	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	30.19	766.8	30.24	768.1	56	13.3	.....	SW	.....	.....	3	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	30.04	763.0	30.34	770.6	49.9	15.5	.....	ESE	.....	.....	1	.....	2	.....	.....	.....	.....	D. clouds....	J. Fisher.
Kew, Observatory	30.24	768.1	30.28	769.1	57.6	14.2	.....	NW	4	1.8	.....	.....	2	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	30.20	767.1	30.23	767.8	56	13.3	.....	SW	.....	.....	1	.....	9	.....	.....	.....	.....	Overcast....	George Mitchell.
Leicester, Museum	.....	.....	30.26	768.6	58.0	14.4	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	30.61	782.2	30.08	764.0	75	23.9	.....	E	.....	.....	2	.....	2k	.....	.....	.....	.....	Blue sky.....	Sergt. Beckett.
Nairn	29.91	759.7	30.01	762.2	54	12.2	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.85	758.9	81.4	27.7	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	30.04	763.0	30.23	767.8	61.0	16.1	.....	SW	.....	.....	2	.....	1c;k	.....	WSW	0	0	Blue sky....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.73	755.1	30.25	768.3	58.0	14.4	.....	W	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.27	768.8	60	15.6	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	H.E. Bellamy.
Plymouth	30.23	767.8	30.30	769.6	56.7	13.7	.....	SW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	John Merrifield.
Rocho's Point	30.20	767.1	30.23	767.8	57	13.9	.....	SSW	.....	.....	4	.....	5	.....	.....	.....	.....	Cloudy	W. Kennedy.
Saint Ann's Head	30.10	764.5	30.26	768.6	58	14.4	.....	SSW	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.96	761.0	53.8	12.1	.....	WSW	25	11.2	.....	.....	10	.....	.....	.....	.....	Overcast....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.10	764.5	70.0	21.1	.....	NE	.....	.....	2	.....	2	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.94	760.5	30.22	767.6	60.9	16.1	.....	SW	.....	.....	1	.....	3	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth, Rectory	30.15	765.8	30.18	766.6	60.0	15.6	73	W	.....	.....	3	.....	2	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	29.82	757.4	30.23	767.8	55.0	12.8	.....	W	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	Rev. S. J. Perry.
Stornoway, Lewis C., (Incor.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	30.06	763.5	30.28	769.1	60.2	15.7	.....	NW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	Rev. C. H. Griffith, F.M.S.
Thurso	29.91	759.7	29.97	761.2	55	12.8	.....	SSW	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast....	John Trotter.
Truro, Royal Institution	.....	.....	30.28	769.1	62	16.7	.....	S	.....	.....	5	.....	4	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	30.12	765.0	30.14	765.5	57.2	14.0	.....	S	32	14.3	.....	.....	8	.....	.....	.....	.....	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.68	753.9	50.0	10.0	81	NW	.....	.....	3	.....	7k	.....	.....	0.02	0.5	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	74.6	23.7	68	NE	4.0	1.8	.....	0	8	.....	.....	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.93	760.2	30.02	762.5	49.9	9.9	86	NE	6	2.7	.....	.....	3	.....	NNW	0.04	1.0	Hazy.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 41° 30', W. 59° 20'	.....	.....	30.11	764.8	61	16.1	.....	ENE	.....	.....	5	.....	9	.....	.....	6	Confused.	Overcast.....	Capt. Alex. Wilson.
Barque Commewyne, N. 9° 45', W. 54° 35'	.....	.....	29.98	761.5	85	29.4	.....	SE	.....	.....	3	.....	3	.....	.....	2	NE	Blue sky.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 20° 20', W. 64° 20'	.....	.....	29.94	760.5	85	29.4	.....	.....	.....	.....	2	.....	5	.....	.....	.....	Confused.	Showery....	Capt. D. W. A. Quaile
Schooner Traveller,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the cooperation of Señor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'r. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26.26	666.7	29.97	761.2	68.9	20.5	91					1c	7s		E	0	0		Mr. Ansart. Federico Maison

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.73 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.89	759.2	29.94	760.4	56.8	13.8	68	NW			2		3						
Faröe	29.97	761.1	29.98	761.6	54.9	12.7	77	W			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.71	754.7	29.75	755.6	51.3	10.7	89	SW			5		10					Raining	
Vestervig	29.76	755.8	29.93	760.1	52.2	11.2	98	WNW			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.78	756.3	30.33	770.3	56.5	13.6	64	NE			1		2		NW	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.24	768.2	30.30	769.5	59.0	15.0	72	SW			2		2		NE	0	0	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	29.87	758.6	29.95	760.6	60.8	16	62	N			1		8		SSE	0	0	Very cloudy	M. Giraud, Director.
Bar-sur-Seine	29.71	754.6	30.39	771.8	55.2	12.9	69	E			2		10			0	0	Covered	C. Saillard.
Beaumette Obs'y 'Angers)																			Albert Cheux.
Beauvais, Normal School	30.02	762.4	30.30	769.7	58.1	14.5	67	N			1		5		N	0	0	Cloudy	Frere Eugene Marie, Director.
Besançon	29.35	745.4	30.24	768.0	59.9	15.5	74	SW			4		2		E	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.38	746.3	30.31	769.9	58.1	14.5	70	N			4		8cs		N	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.69	754.0	30.27	768.9	58.6	14.8	96	N			2		5ks		N	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	30.03	762.7	30.27	768.9	66.2	19.0	67	Calm			0		1		Calm	0	0		The Staff.
Carcassonne, Normal School	29.74	755.3	30.15	765.8	61.2	16.2	80	NE			1		10	E	E	0	0	Covered	Septembre, Director.
Caen	30.23	767.8	30.30	769.7	59.7	15.4	68	N			2		2		NE	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.67	753.7	30.24	768.2	55.0	12.8	95	NE			2		2		SW	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.94	760.5	30.26	768.7	55.8	13.2	77	W			1		8ck		W	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D.Obs	28.86	733.0	30.21	767.2	60.8	16.0	52	NE			1		2		E	0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.40	746.7	30.29	769.4	51.6	10.9	80	W			1		kn		W	0	0		Dr. Coulet, Director
Commune de Grèasque*	29.03	737.4	30.17	766.4	65.7	18.7	72	NE			1		10	SE		0	0	Covered	M. Kina.
Grenoble, Normal School	29.39	746.6	30.16	766.1	56.8	13.8	76	ESE			1		ks			0	0		M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	30.00	761.9	30.31	769.8	57.6	13.9	58	NW			3		2		NW	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.32	744.8	30.24	768.0	59.2	15.1	56	E			1		5		E	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	30.21	767.3	30.31	769.8	61.9	16.6	56	ESE			1			N	NE	0	0		T. Carré, Director.
Mâcon, Normal School	30.24	768.1	30.27	768.9	59.0	15	78	W			1		5		W	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	29.19	741.5	30.24	768.1	58.6	12.0	81	SW			1		10kn		NE	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.99	760.9	30.16	766.1	63.0	17.2	53	N			1		10		N	0	0	Covered	Boyer, Director.
Privas, Normal School	29.14	740.2	30.21	767.4	56.5	13.6	60	N			3		1	S	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.31	642.9			42.3	5.7	82	E			2		8			0	0		Allhard, Director.
Rochefort, Naval Obs'y	30.23	767.8	30.26	768.6	63.9	17 7	73	NNE			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.21	767.3	30.30	769.5	60.3	15.7	52	W			1		0			0.016	0.4	Clear	F. Lucard, Director.
Saint Malo (Port)			30.30	769.7	59.4	15.2	57	SE			1		1		SE	0.048	1.23	Clear	M. H. Herconet.
Saint Maur, (near Paris)	30.12	765.1	30.29	769.3	57.4	14.1	52	NW			1		1		N	0	0		E. Renou.
Tarbes, Normal School	29.01	736.9	30.09	764.2	59.0	15	89	W			1		10			0.16	4.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.60	749.3	30.24	768.2	62.6	17	56	NNE			3		5		NW	0	0	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	81.0	27.2										0	0		L'Abbé Marchés.
Lyons, Observatory			30.22	767.6									10			0	0		
Marseilles, Observatory			30.10	764.5	68.2	20.1	64	W			1		7			0	0	Cloudy	The Staff.
Mont-Louis	24.99	634.8	30.31	769.8	47.3	8.5	56	NNW			2		6			0	0		M. Cave.
Nice			30.14	765.5	67.6	19.8	79	E			3		8			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	30.00	762.1	30.28	769.1	56.5	13.6	48	N			3		3		NNW	0	0		Marié Davy, Director
Perpignan			30.17	766.4	62.2	16.8	65	E	5.6	2.5			10		?	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.64	575.0			33.4	0.8		N			3		10			0.087	2.2	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.50	749.2	30.23	767.7	60.4	15.8	61	NNW			1		9			0	0		The Staff.
Tours																			C. Marquet.
Versailles																			Dr. A. Berigny.
Zi-Ka-Wei, (near Shanghai)	30.34	770.7	30.37	771.4	57.9	14.4	93	NNW	0.2	0.1		9clk				0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:55, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.28	743.6	30.12	765.1	53.8	12.1	74	NW			3		6	W		0.012	0.3	Raining	Prof. Dr. Hoh.
Berlin	29.97	761.3	30.15	765.7	58.3	14.6	62	SW			2		4			0.071	1.8		Prof. Arndt.
Breslau	29.68	753.8	30.21	767.4	59.5	15.3	46	WSW			3		4			0.031	0.81		Royal University Obs'y
Carlsruhe	29.80	756.8	30.23	767.8	55.4	13.0	76	SW			1		10			0.039	1.0		Albert Senz.
Cassel	29.58	751.4	30.19	766.9	55.8	13.2	69	S			2		8	SW		0.044	1.13		Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	57.7	14.3	64	NW			3		8			0	0	Dust-Haze.	Director Lose.
Emden	30.17	766.3	30.21	767.2	56.1	13.4	69	WNW			2		2			0.071	1.8		Prof. Prestel.
Frankfort on the Main	29.87	758.8	30.24	768.1	57.4	14.1		SW			1		8			Inap.	Inap.		Physical Society.
Friedrichshafen	28.75	730.2	30.19	766.7	56.1	13.4	72	WSW			1		9	N		0.043	1.1		M. Wilhelm.
Hamburg	30.03	762.8	30.10	764.6	53.4	11.9	93	W			3		8kn			0.067	1.7	Raining	Captain F. Hegemann.
Kiel	30.04	763.0	30.06	763.4	56 8	13.8	71	W			4		7			0.113	2.57		Prof. G. Karsten.
Königsberg, (Prussia)	29.93	760.3	30.02	762.4	55.0	12.8	78	SW			6		4			0.354	9.0		Prof. E. Luther.
Köslin			30.01	762.3	54.3	12.4		SW			2		4			0.236	6.0		H. Müller.
Leipsic, Observatory	29.79	756.6	30.21	767.2	53.4	13.0	59	SW			3		6	W		0.067	1.7		Prof. Bruhns.
Memel, Naval School								SW			6		10s;n					Squally	Reinbrecht and Skalweit.
Neufahrwasser	30.04	763.1	30.06	763.5	56.5	13.6	87	WSW			4		5			0.228	5.8		A. Lothes.
Posen	29.89	759.2	30.18	766.6	57.7	14.3	61	W			6		5			0	0		Dr. Magener.
Strassburg (in Alsace)	29.71	754.6	30.26	768.6	56.7	13.7	71	SW			2		9	W		0	0		Astronomical Observatory.
Stuttgart	29.25	743.0	30.20	767.0	55.0	12.8	66	NW			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.69	754.0	30.21	767.2	55.4	13.0	60	WSW			2		10			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.71	729.1	30.20	767.0	54.9	12.7	52	NE	0.4	0.2			9ck		WNW	0.008	0.2		Dr. Von Bebber.
Wustrow, Naval School	30.00	762.1	30.03	762.7	55.8	13.2	87	SW			6		7ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.73	755.1	30.11	764.8	76.0	24.8		S			0.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.44	747.7	29.91	759.6	89.0	31.7	45	W					0			0	0	Blue sky	
Bombay	29.80	756.8	29.83	757.8	86.2	30.1	83	NW	16	7.2			1	NW		0	0	D. clouds	
Poona	27.88	708.2	29.86	758.3	86.6	30.3	39	N					3		N	0	0	D. clouds	
Lahore	29.07	738.3	29.80	756.9	85.0	29.4	44	Calm	0.9	0.4						0	0	Blue sky	
Belgaum	27.34	694.4	29.86	758.4	80.1	26.7	89	E	2	0.9			1			0.01	0.3	D. clouds	
Roorkee	28.90	734.1	29.80	756.8	81.8	27.7	60	Calm	2	0.9						0	0		
Agra	29.22	742.2	29.77	756.2	93.6	34.2	37	W								0	0		
Nagpur	28.77	730.8	29.80	757.0	85.6	29.8	50	Calm	3	1.3			2			0	0	D. clouds	
Lucknow	29.43	747.4	29.80	756.8	83.5	28.6	49	Calm	0.9	0.4						0	0	Blue sky	
Allahabad																0	0		
Patna	29.63	752.5	29.81	757.1	82.5	28.1	77	E	0.3	0.1			2	E	E	0	0		
Hazaribagh	27.80	706.2	29.81	757.3	77.8	25.4	50	ESE	3.4	1.5			0			0	0	Blue sky	
Cuttack	29.74	755.4	29.82	757.4	84.0	28.9	68	NE	1.5	0.7						0	0	Blue sky	
Calcutta (Alipore)	29.77	756.2	29.80	756.8	82.4	28.0	84	ENE	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.41	747.0	29.80	756.9	81.8	27.7	73	ENE	1.1	0.5			0			0	0	Blue sky	
Chittagong	29.72	754.8	29.81	757.2	83.5	28.6	63	W	1.8	0.8			2			0	0	Misty	
Sibsagar	29.51	749.5	29.84	758.0	78.9	26.1	75	ENE	1.1	0.5			8	SSE	SSE	0	0	D. clouds	
Jubbulpore	28.45	722.7	29.80	756.8	88.0	31.1	40	Calm	1.7	0.8			0					Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.77	756.1	30.18	766.5	62.8	17.1	63	E	4.9	2.2	.....	.....	6	.....	.....	0.079	2.0	.....	Prof. Giovanni Clodig.
Padua	30.04	762.9	30.15	765.7	65.8	18.8	75	ESE	7.4	3.3	.....	.....	8	E	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.96	761.0	30.15	765.8	66.2	19.0	71	E	1.8	0.8	.....	.....	5	E	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.63	752.6	30.14	765.6	62.2	16.8	88	NE	.....	.....	1	.....	9	E	.....	1.055	26.8	.....	Prof. Schiaparelli.
Moncalieri	29.25	742.9	30.15	765.9	61.9	16.6	77	NNW	1.3	0.6	.....	.....	9	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.23	717.1	30.13	765.4	60.6	15.9	77	W	.....	.....	2	.....	6	NE	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.91	759.8	30.13	765.4	66.9	19.4	65	ENE	.....	.....	6	.....	6	SW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.97	761.2	30.14	765.5	68.9	20.5	56	SW	1.8	0.8	.....	.....	8	W	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.84	757.8	30.15	765.8	65.8	18.8	66	SE	.....	.....	2	.....	7	.....	.....	1.264	32.1	.....	Prof. P. Pigorini.
Florence	29.87	758.6	30.12	765.0	71.1	21.7	59	E	.....	.....	2	.....	9	WSW	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.93	761.5	30.07	763.7	69.6	20.9	65	NE	6.9	3.1	.....	.....	7	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.08	764.0	30.13	765.3	64.9	18.3	83	NW	5.6	2.5	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.61	726.6	30.15	765.8	61.0	16.1	84	NNE	.....	.....	2	.....	5	.....	.....	0.354	9.0	.....	Prof. P. Serpieri
Rome	29.95	760.8	30.13	765.2	74.5	23.6	62	SW	3.9	1.7	.....	.....	1	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.95	760.8	30.15	765.8	76.3	24.6	60	SW	.....	.....	2	.....	5	NW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.93	760.2	30.18	766.6	69.4	20.8	58	NNW	1.8	0.8	.....	.....	2	.....	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.88	757.6	30.02	762.4	75.2	24.0	61	E	.....	.....	2	.....	3	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.25	743.0	30.12	765.1	73.8	23.2	73	NW	1.3	0.6	.....	.....	9	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.89	759.1	30.13	765.4	72.1	22.3	63	ENE	4.3	1.9	.....	.....	7	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.08	764.0	30.15	765.9	72.9	22.7	65	ENE	6.3	2.8	.....	.....	7	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.8 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	30.02	762.5	30.22	767.6	63.6	17.6	59	NE	.....	.....	.....	.....	2c;cs	WNW	.....	0.037	0.94	Fair	I. Arai, Director.
Tokei (Yeddo) Observatory	30.09	764.3	30.15	765.8	51.1	10.6	67	NNW	12.1	5.4	.....	6ck	0	W	.....	0	0	Fair	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.8	18.8	77	SW	.....	.....	4	3ck	1s	.....	.....	0	0	⅛ cloudy	P. Ceballos.
Guadalajara	25.10	637.6	30.07	763.7	59.0	15.0	76	SE	.....	.....	2	.....	5	.....	S	0	0	⅛ cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.47	621.6	30.02	762.6	60.4	15.8	81	SE	.....	.....	1	2c	3k	NE	NE	0.013	0.34	⅛ cloudy	Prof. M. Leal.
Mexico	23.17	588.4	30.20	767.1	53.2	11.8	85	NW	0.9	0.4	.....	0	10k	.....	NE	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	62.1	16.7	80	W	.....	.....	1	1c	2k	.....	NE	Inap.	Inap.	Clear.	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpam	29.93	760.2	29.94	760.5	78.4	25.8	90	W	.....	.....	2	0	5	.....	N	0.079	2.	Threatening	M. M. Cházaro.
San Luis Potosi	24.24	615.1	30.19	766.7	62.0	16.7	35	ESE	.....	.....	.....	.....	10	.....	ESE	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	29.99	761.9	30.02	762.6	83.3	28.5	74	N	8.5	3.8	.....	0	4sk	.....	N	0	0	⅛ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.3	30.04	763.1	52.5	11.4	92	WNW	.....	.....	.....	4	1	N	Calm	0	0	.....	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. V. de Leon, C. E.
Colima	28.37	720.5	30.00	762.1	75.7	24.3	85	NE	.....	.....	.....	0	9	.....	E	0.110	2.8	Covered	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,536.5 m., or 5,108.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The rain-fall is generally measured at 6, a. m., local time. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.20	768.5	30.20	768.5	57.9	14.4	.....	WNW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	30.10	764.6	30.16	766.0	55.4	13.0	.....	NW	.....	.....	2	.....	.....	.....	.....	0.004	0.1	.....	
Helder	30.17	766.2	30.17	766.2	56.1	13.4	.....	WNW	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.21	767.4	30.21	767.4	57.4	14.1	84	NW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.16	766.0	30.21	767.2	58.5	14.7	62	W	.....	.....	2	.....	5	.....	.....	0.028	0.7	Cloudy	H. v d Broek.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.73	755.1	29.78	756.5	50.7	10.4	70	NW	17.9	8.0	.....	.....	4	.....	.....	0.610	15.5	Raining	
Brönö	29.42	747.3	29.46	748.3	53.6	12.0	76	SSW	18	8	.....	.....	9	.....	.....	0.236	6.0	.....	
Christiania	29.43	747.4	29.57	751.1	59.7	15.4	70	SW	7	3	.....	.....	5	.....	.....	0.220	5.6	.....	
Tromsö	29.42	747.2	29.46	748.3	41.4	5.2	84	Calm	0	0	.....	.....	10	.....	.....	0.039	1.0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.02	762.6	30.21	767.4	66.2	19.0	87	N	1.3	0.6	.....	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.11	739.5	30.13	765.2	68.0	20.0	54	W	1.3	0.6	.....	.....	8	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.13	765.2	30.21	767.4	73.8	23.2	53	SW	8.1	3.6	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.79	756.6	30.14	765.6	66.7	19.3	69	SE	7.4	3.3	.....	.....	6	.....	.....	0.008	0.2	.....	The Staff.
Ponta Delgada, (Azores)	30.17	766.4	30.24	768.2	74.8	23.8	59	SW	.....	.....	.....	.....	4	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	1	SSW	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Sá da Bandeira	.....	.....	29.96	761.0	81.1	27.3	.....	WSW	.....	.....	2	.....	3	.....	.....	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado	.....	.....	29.91	759.8	86.4	30.2	.....	SSW	.....	.....	1	.....	3	.....	SSW	1	.....	D. clouds.....	L. Ribeiro de Costa, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 45° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.96	761.0	30.07	763.6	60.8	16	76	NNE	1.4	0.61	.....	.....	10	.....	.....	0.084	2.14	Misty.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.11	764.8	30.17	766.2	74.8	23.8	66	W	1.5	0.66	.....	2	1	E	.....	Inap.	Inap.	Almost clear.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.13	689.2	.....	.....	58.5	14.7	90	SW	2.9	1.30	.....	.....	9	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.88	708.1	30.06	763.5	68.0	20.0	44	SE	11.9	5.34	.....	2	0	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.86	758.4	30.00	762.1	81.0	27.2	51	NE	2.9	1.31	.....	.....	1	.....	.....	0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.23	742.5	30.11	764.9	65.3	18.5	68	NE	13.7	6.11	.....	.....	3	.....	.....	0	0	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.89	759.2	29.95	760.9	77.7	25.4	88	N	7.8	3.5	.....	.....	10n	.....	N	0.102	2.6	Raining.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.8	30.13	765 3	69.8	21.0	52	WNW	20.1	9.0	.....	0	3	.....	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	29.83	757.6	29.92	759.9	81.7	27.6	89	S	0	0	.....	1s	0	S	.....	0	0	Clear	Leonardo de Toledo, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

1878.—October 13.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.60	751.8	29.64	752.8	46.4	8.0	.....	Calm	.....	.....	0	.....	10	.....	.....	0.31	8.	Foggy	
Umea	29.56	750.9	29.61	752.2	47.8	8.8	100	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.50	749.4	29.56	750.7	50.4	10.2	95	S	.....	.....	2	.....	10	.....	.....	0.138	3.5	Raining	
Stockholm	29.51	749.6	29.69	754.1	56.7	13.7	72	WSW	.....	.....	4	.....	9	.....	.....	0.016	0.4	.....	
Wisby	29.72	754.9	29.78	756.4	57.6	14.2	72	WSW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.56	750.9	29.64	752.8	54.7	12.6	76	SW	.....	.....	.....	.....	10	.....	.....	0.003	0.08	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.79	731.2	30.21	767.3	55.4	13.0	63	N	.....	.....	2	.....	8	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.57	725.7	30.21	767.2	55.0	12.8	68	W	.....	.....	1	.....	8	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.0 mm.; Thermometer, —0.5 cent.; Relative Humidity, —8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.15	765.9	66.9	19.4	56	ENE	13	6.0	.....	2	.....	NE		0	0	.....	The Observatory.
Valona	.....	.....	30.21	767.2	70.2	21.2	.....	W	.....	.....	1	0	.....	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.89	759.2	29.98	761.5	77.0	25.5	54	N	.....	.....	2	0	.....	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.73	755.1	30.03	762.7	47	8.3	.....	Calm	0	0	.....	.....	10n	.....	NE	Inap	Inap.	Light rain	W. R. Bigg.
*Chatham, N. B.	30.18	766.6	30.24	768.1	32	0.0	97	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	G. A. Blair.
Charlottetown, P. E. Island.	30.17	766.3	30.22	767.6	44	6.7	68	E	3	1.3	.....	.....	10ks	.....	Calm	0.005	0.13	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.99	761.7	47.6	8.7	90	SW	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.05	763.3	30.21	767.3	36	2.2	100	N	.....	.....	1	.....	.....	.....	.....	0	0	.....	H. A. Johnson
Esquimault, B. C.	29.68	753.9	29.73	755.1	42.3	5.7	100	Calm	.....	.....	.....	9ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.09	764.3	30.12	765.0	39	3.9	82	SW	18	8.0	.....	5k	8s	W	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	30.16	766.1	30.22	767.6	34.0	1.1	73	Calm	0	0	.....	3cs	Fog	.....	.....	0.41	10.4	Foggy	Prof. Harrison.
*Fort Garry Manitoba	29.90	734.0	29.75	755.6	33	0.6	94	SW	4	1.8	.....	5cs	2s	W	W	0	0	Fair	James Stewart.
Granton, Ontario	29.04	737.6	30.18	766.6	35	1.7	100	Calm	.....	.....	0	0	0	.....	.....	0.29	7.4	Foggy	James Grant.
*Halifax, N. S.	30.04	763.0	30.17	766.3	44	6.7	78	N	2	0.9	.....	.....	8ks	.....	SE	0	0	Fair	F. Allison, M. A.
Hamilton, Ontario	29.80	756.9	30.18	766.6	44.6	6.9	89	SW	.....	.....	1	0	0	.....	.....	0.09	2.3	Clear	Geo. Dickson, M. A.
Heart's Content, N. F.	30.10	766.8	30.22	767.6	40	4.4	56	NW	.....	.....	4	0	2ks	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.71	754.6	30.05	763.3	48	8.9	87	N	6	2.7	.....	5cs	2s	Calm	Calm	0.04	1.0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.20	767.1	30.24	768.1	44.1	6.7	75	W	4	1.8	.....	.....	10n	.....	.....	0.03	0.8	Overcast	C. H. Rigby.
*Montreal, Quebec	29.82	757.4	30.02	762.5	48	8.9	81	S	6	2.7	.....	.....	10ks	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.42	747.3	30.14	765.5	35	1.7	99	N	1	0.4	.....	0	0	.....	.....	0.20	5.1	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.34	745.2	30.10	764.5	48.8	6.6	88	W	.....	.....	2	0	2ks	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.14	765.5	41	5.0	100	Calm	0	0	.....	0	0	.....	.....	0.06	1.5	Clear	H. Morgan.
Port Hastings, N. S.	30.19	766.8	30.24	768.1	41.4	5.2	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.50	749.3	30.17	766.3	36	2.2	98	N	1	0.4	.....	0	Fog	.....	NW	0.14	3.6	Foggy	M. Payne.
*Quebec, Quebec	29.78	756.4	30.11	764.8	44	6.7	84	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Cloudy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.61	752.1	30.07	763.8	42	5.6	100	W	5	2.2	.....	0	2n	.....	.....	0.21	5.3	Fair	W. H. McIntyre.
St. Andrews, N. B.	30.10	764.5	30.16	766.1	46	7.8	78	E	2	0.9	.....	2k	2ks	W	.....	0	0	Fair	Dr. Gove.
St. John, N. B.	30.04	763.0	30.21	767.3	42	5.6	83	NE	4	1.8	.....	7ck	0	.....	.....	0.17	4.3	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.41	747.0	30.14	765.5	38	3.3	85	SE	3	1.3	.....	0	0	.....	.....	0.24	6.1	Clear	K. Stewart.
Stayner, Ontario	29.33	745.0	30.11	764.8	51	10.6	66	Calm	0	0	.....	0	0	.....	.....	0.18	4.6	Clear	R. J. Cole.
Stratford, Ontario	28.85	732.8	30.18	766.6	34.0	1.1	99	Calm	0	0	.....	0	.....	.....	.....	0.185	4.70	Clear	C. J. MacGregor, M. A
*Sydney, C. B.	30.22	767.6	30.25	768.3	46	7.8	70	SW	2	0.9	.....	2c	8ks	.....	SW	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.12	765.0	42	5.6	91	NW	2	0.9	.....	0	0	.....	.....	0.04	1.0	Clear	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	42	5.6	83	SW	.....	.....	.....	2k	2s	.....	.....	0.04	1.0	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,075 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.79	756.7	30.02	762.5	48	8.9	78	N	3	1.3	.....	2cs	8s	Calm	N	0	0	Cloudy	
Alpena, Michigan	29.45	748.0	30.11	764.8	41	5.0	41	Calm	0	0	.....	0	0	.....	.....	0.03	0.8	Clear	
Atlanta, Georgia	28.87	733.3	30.01	762.2	55	12.8	93	NW	12	5.4	.....	0	Sm'e	.....	NW	0.03	0.8	Clear	
Atlantic City, New Jersey	29 82	757.4	29.84	757.9	64	12.2	100	NE	18	8.0	.....	.....	10s	.....	NE	0.38	9.7	Cloudy	
Augusta, Georgia	29.86	758.2	30.03	762.7	63	17.2	89	N	2	0.9	.....	5k	Haze	N	.....	0.14	3.6	Fair	
Baltimore, Maryland	29.91	759.7	29.96	761.0	55	12.8	68	N	8	3.6	.....	10k	0	N	.....	0	0	Cloudy	
Barnegat, New Jersey	29.82	757.4	29.84	757.9	55	12.8	90	NE	42	18.8	.....	.....	10n	.....	NE	0.85	8.9	Light rain	
Bismarck, Dakota	27.89	708.4	29.74	755.4	38	3.3	81	Calm	0	0	.....	10cs	0	Calm	.....	0	0	Cloudy	
Boerne, Texas	28.61	726.7	.....	.....	68	20.0	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	26.98	685.3	29.94	760.5	50	10.0	64	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Boston, Massachusetts	29.85	758.2	30.01	762.2	47.5	8.6	97	N	13	5.8	.....	.....	10n;fg	.....	NE; Calm	0.13	3.3	Light rain	
Brackettville, Texas	28.89	733.8	29.89	759.2	70	21.1	75	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.74	730.0	29.75	755.6	36	2.2	80	E	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.00	762.0	30.06	763.5	69	20.6	95	Calm	0	0	.....	2k	Fog	Calm	.....	0	0	Foggy	
Buffalo, New York	29.40	746.7	30.10	764.5	49	9.4	86	NW	6	2.7	.....	0	0	.....	.....	0.04	1.0	Clear	
Burkes, Arizona	.....	.....	.....	.....	64	17.8	Inap.	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.81	757.2	30.07	763.8	48	8.9	78	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Cairo, Illinois	29.78	756.4	30.18	766.6	50	10.0	65	E	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	
Camp Apache, Arizona	25.20	640.1	30.20	767.1	43	6.1	50	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.22	640.6	30.02	762.5	59	15.0	33	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.79	680.4	30.28	769.1	45	7.2	24	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp o, California	27.47	697.7	30.04	763.0	37	2.8	71	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolin	29.78	756.4	29.79	756.7	62	16.7	83	N	25	11.2	.....	.....	10s	.....	N	3.40	86.4	Cloudy-	
Cape Henry, Virginia	29.79	756.7	29.81	757.2	61	16.1	82	NE	42	18.8	.....	0	5s	.....	NE	1.84	46.7	Clearing	
Cape Lookout, N. Carolin	29.84	757.9	29.86	758.4	60	15.6	77	N	26	11.6	.....	8ck	0	NW	.....	2.50	63.5	Cloudy	
Cape May, New Jersey	29.83	757.7	29.86	758.4	55	12.8	81	N	30	13.4	.....	.....	10s	.....	N	0.04	1.0	Cloudy	
Castroville, Texas	29.26	743.2	29.94	760.5	69	20.6	90	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolin	29.95	760.7	30.02	762.5	61	16.1	82	N	11	4.9	.....	2ck	2s	NW	N	0.04	1.0	Fair	
Cheyenne, Wyoming	23.91	607.3	29.35	758.2	45	7.2	24	W	4	1.8	.....	5ck	0	W	.....	0	0	Fair	
Chicago, Illinois	29.45	748.0	30.16	766.1	46	7.8	77	SW	5	2.2	.....	0	Fog	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.58	751.3	30.24	768.1	48	8.9	78	NW	2	0.9	.....	.....	Fog	.....	Calm	0.51	13.0	Foggy	
Cleveland, Ohio	29.44	747.8	30.18	766.6	49	9.4	78	NE	4	1.8	.....	2k	Fog	NE	Calm	0.29	7.4	Fair	
Coleman City, Texas	28.27	718.0	29.92	760.0	58	14.4	82	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.33	745.0	30.19	766.8	41	5.0	83	N	4	1.8	.....	0	Fog	.....	Calm	0.08	2.0	Clear	
Concho, Texas	28.14	714.7	29.79	756.7	60	15.6	76	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.63	752.6	30.09	764.3	67	19.4	74	E	10	4.5	.....	Haze	2s	Calm	Calm	0	0	Fair	
Davenport, Iowa	29.53	750.0	30.18	766.6	49	9.4	64	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Decatur, Texas	28.92	734.6	30.08	764.0	61	16.1	82	E	14	6.3	.....	0	4s	.....	S	0	0	Fair	
Denison, Texas	29.33	745.0	30.13	765.3	58	14.4	64	E	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Denver, Colorado	24.67	626.6	29.89	759.2	48	8.9	23	S	5	2.2	.....	0	2s	.....	Calm	0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.05	763.3	48	8.9	70	SW	6	2.7	.....	2cs	Haze	Calm	Calm	0	0	Clear	
Detroit, Michigan	29.49	749.0	30.17	766.3	42	5.6	83	NW	2	0.9	.....	0	Fog	.....	Calm	0.28	7.1	Clear	
Dodge City, Kansas	27.39	695.7	29.67	753.6	49	9.4	67	S	16	7.2	.....	2c	0	W	.....	0	0	Fair	
Dubuque, Iowa	29.42	747.3	30.12	765.0	43	6.1	63	SW	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Duluth, Minnesota	29.21	741.9	29.89	759.2	46	7.8	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.25	742.9	29.99	761.7	67	19.4	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.06	764.0	30.15	765.8	47	8.3	77	E	14	6.3	.....	10c;hz	0	Calm	.....	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	69	20.6	90	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	Foggy	
El Paso, Texas	.....	.....	.....	.....	67	19.4	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.39	746.5	30.11	764.8	62	11.1	66	N	12	5.4	.....	0	0	.....	.....	0.10	2.5	Clear	
Escanaba, Michigan	29.35	745.5	30.00	762.0	48	8.9	63	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Florence, Arizona	28.43	722.1	30.03	762.7	62	16.7	36	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.61	752.1	45	7.2	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.29	642.4	30.25	768.3	58	14.4	53	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.59	751 6	30.13	765.3	54	12.2	61	SE	6	2.7	.....	2c	0	NW	.....	0	0	Clear	
Fort Griffin, Texas	28.81	731.8	30.07	763.8	57	13.9	63	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Fort McKavett, Texas	27.82	706.6	29.68	753.9	69	20.6	80	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.88	733.5	29.97	761.2	60	15.6	60	SE	8	3.6	.....	0	8s	.....	S	0	0	Cloudy	
Fredericksburg, Texas	29.29	718.6	29.79	756.7	73	22.8	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.01	762.2	30.06	763.5	77	25.0	95	N	10	4.5	.....	.....	10ks	.....	N	0.03	0.8	Cloudy	
Graham, Texas	28.99	736.3	30.04	763.0	60	15.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.50	749.3	30.16	766.1	44	6.7	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.44	747.8	30.24	768.1	42	5.6	83	Calm	0	0	.....	0	0	.....	.....	0.55	14.0	Clear	
Indianola, Texas	30.04	763.0	30.07	763.8	78	25.6	86	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.92	734.6	30.02	762.6	63	17.2	67	NE	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Jacksonville, Florida	29.94	760.5	29.96	761.0	69	20.6	85	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.43	747.5	30.04	763.0	50	10.0	72	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.90	759.4	29.94	760.5	78	25.6	73	N	16	7.2	.....	2k	8s	N	Calm	0	0	Cloudy	
Kittyhawk, North Carolin	29.75	755.6	29.77	756.1	60	15.6	88	N	41	18.3	.....	5cs	2s	N	N	2.02	51.3	Fair	
Knoxville, Tennessee	29.14	740.1	30.15	765.8	52	11.1	79	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	
La Crosse, Wisconsin	29.29	744.0	30.03	762.7	48	8.9	70	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	47	8.3	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.58	751.3	29.91	759.7	75	23.9	81	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.60	624.8	29.88	758.9	55	12.8	39	SW	10	4.5	.....	0	Haze	.....	Calm	0	0	Clear	
Leavenworth, Kansas	29.25	742.9	30.10	764.5	48	8.9	63	S	5	2.2	.....	2cs	0	NW	.....	0	0	Clear	
Los Angeles, California	29.67	753.6	30.01	762.2	58	14.4	84	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Louisville, Kentucky	29.66	753.4	30.23	767.8	46	7.8	62	N	6	2.7	.....	0	Sm'e	.....	N	0.66	16.8	Clear	
Lynchburg, Virginia	29.33	745.0	30.00	762.0	57	13.9	62	NW	8	3.6	.....	0	0	.....	.....	0.04	1.0	Clear	
Madison, Wisconsin	29.12	739.6	30.11	764.8	49	9.4	64	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	29.19	741.4	29.88	758.9	50	10.0	65	SW	25	11.2	.....	0	0	.....	.....	0	0	Clear	
Mason, Texas	28.41	721.6	30.13	765.3	64	17.8	94	Calm	0	0	.....	2k	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.39	746.5	30.13	765.3	46	7.8	69	SW	14	6.3	.....	0	1s	.....	Calm	0	0	Clear	
Mobile, Alabama	30.04	763.0	30.09	764.3	67	19.4	89	NE	11	4.9	.....	.....	10s	.....	NE	0	0	Cloudy	
Montgomery, Alabama	29.83	757.7	30.06	763.5	63	17.2	83	N	5	2.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Morgantown, West Virginia	29.04	737.6	30.10	764.5	50	10.0	80	N	17	7.6	.....	.....	10ks	.....	NW	0	0	Cloudy	
Mt. Washington, N. H.	23.77	603 8	30.13	765.3	24	— 4.4	87	SE	3	1.3	.....	10ks	0	Calm	.....	0	0	Cloudy	
Nashville, Tennessee	29.68	753.9	30.20	767.1	47	8.3	92	Calm	0	0	.....	0	Sm'e	.....	Calm	0.01	0.3	Clear	
New Haven, Connecticut	29.84	757.9	29.90	761.0	47	8.3	92	NE	16	7.2	.....	.....	10n	.....	NE	0.08	2.0	Light rain	
New London, Connecticut	29.89	759.2	29.94	760.5	49	9.4	93	N	11	4.9	.....	.....	10n	.....	N	0.15	3.8	Light rain	
New Orleans, Louisiana	30.00	762.0	30.06	763.5	73	22.8	76	N	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	29 87	758.7	29.92	760.0	52	11.1	93	N	12	5.4	.....	.....	10n	.....	NE	0.03	0.8	Light rain	
New York, New York	29.78	756.4	29.95	760.7	51	10.6	72	N	20	8.9	.....	5cs	5s	Calm	Calm	0	0	Cloudy	
Norfolk, Virginia	29.81	757.2	29.85	758.4	58	14.4	82	N	16	7.2	.....	.....	10s	.....	N	0.78	19.8	Cloudy	
North Platte, Nebraska	26.93	684.0	29.48	748.8	44	6.7	52	SE	8	3.6	.....	10ck	Sm'e	SW	Calm	0	0	Cloudy	
Olympia, Washington Ter.	29.75	755.6	29.79	756.7	45	7.2	92	SW	4	1.8	.....	.....	9n	.....	SW	0.04	1.0	Light rain	
Omaha, Nebraska	28.87	733.3	29.94	760.5	50	10.0	52	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.74	755.4	30.06	763.5	52	11.1	86	N	13	5.8	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	
Pembina, Dakota	28.90	734.0	29.74	755.4	34	1.1	90	S	6	2.7	.....	0	8s	.....	W	0	0	Fair	
Philadelphia, Pa	29.90	759.4	29.95	760.7	52	11.1	73	N	20	8.9	.....	0	5ks;sm	....	N;calm	0	0	Fair	
Phœnix, Arizona	28.78	731.0	.....	.....	62	16.7	32	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.82	452.2	30.03	762.7	20	— 3.3	40	W	40	17.9	.....	8cs	0	W	.....	0	0	Fair	
Ploche, Nevada	23.99	609.3	29.76	755.9	52	11.1	29	SE	4	1.8	.....	5ck	0	SW	.....	0	0	Fair	
Pittsburg, Pennsylvania	29.30	744.2	30.11	764.8	49	9.4	78	N	6	2.7	.....	0	0	....	.....	0	0	Clear	
Port Huron, Michigan	29.47	748.5	30.15	765.8	44	6.7	76	SW	8	3.6	.....	0	0	.....	.....	0.32	8.1	Clear	
Portland, Maine	30.04	763.0	30.10	764.5	46	7.8	92	N	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	29.80	756.9	29.91	759.7	50	10.0	93	S	4	1.8	.....	.....	10ks	.....	S	0.20	5.1	Cloudy	
Prescott, Arizona	24.78	629.4	30.14	765.5	40	4.4	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.35	745.5	30.17	766.3	64	17.8	94	N	14	6.3	.....	0	0	.....	.....	0	0	Hazy	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	73	22.8	76	N	13	5.8	.....	2cs	0	W	.....	0.01	0.3	Clear	
Red Bluff, California	28.63	752.6	29.99	761.7	58	14.4	64	S	14	6.3	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Rio Grande City, Texas	29.89	759.2	30.10	764.5	78	25.6	78	E	.....	.....	1	0	8ks	.....	E	0	0	Fair	
Rochester, New York	29.44	747.8	30.06	763.5	50	10.0	86	NW	7	3.1	.....	1k	0	Calm	.....	0.02	0.5	Clear	
Roseburg, Oregon	29.39	746.5	29.96	761.0	48	8.9	93	SW	3	1.3	.....	.....	10s	....	Calm	0.40	10.2	Cloudy	
Sacramento, California	29.95	760.7	30.03	762.7	52.5	11.4	83	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.64	752.8	30.23	767.8	51	10.6	72	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	29.99	761.7	30.00	762.0	66	18.3	94	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.04	737.6	29.87	758.7	45	7.2	67	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.49	647.4	29.82	757.4	61.0	16.1	21	NE	4	1.8	.....	5k	0	W	.....	0	0	Fair	
San Antonio, Texas	29.37	746.0	29.94	760.5	71	21.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.99	761.7	30.06	763.5	59	15.0	94	NE	6	2.7	.....	0	0	....	.....	0	0	Clear	
Sandusky, Ohio	29.52	749.8	30.20	767.1	48	8.9	85	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	29.90	759.4	29.98	760.2	53	11.7	74	NE	29	13.0	.....	.....	10ks	.....	NE	0.37	9.4	Clear	
San Francisco, California	29.99	761.7	30.06	763.5	57	13.9	84	S	5	2.2	.....	.....	10ks	.....	W	0.08	2.0	Cloudy	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	44	6.7	30	E	2	0.9	.....	0	0	....	.....	0	0	Cloudy	
Savannah, Georgia	29.90	759.4	30.00	762.0	63	17.2	89	N	7	3.1	.....	.....	10s	.....	N	0	0	Clear	
Shreveport, Louisiana	29.93	760.2	30.16	766.1	59	15.0	76	NE	3	1.3	.....	0	0	.....	.....	0.04	1.0	Cloudy	
Silver City, New Mexico	24.35	618.5	.....	.....	44	6.7	52	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.91	759.7	29.94	760.5	56	13.3	87	N	10	4.5	.....	0	1s	.....	N	1.15	29.2	Clear	
Springfield, Massachusetts	29.88	758.9	30.01	762.2	49	9.4	71	N	8	3.6	.....	... ...	10s	.....	N	0	0	Cloudy	
Stockton, Texas	27.05	687.1	30.05	763.3	53	11 7	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.98	761.5	30.03	762.7	51	10.6	100	NE	25	11.2	.....	.....	10n	.....	NE	0.04	1.0	Light rain	
Toledo, Ohio,	29.59	749.3	30.10	766.8	44	6.7	84	W	2	0.9	.....	0	Fog	.....	Calm	0.24	6.1	Clear	
Tucson, Arizona	.....	.....	.....	.....	64	17.8	45	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.96	761.0	29.99	761.7	64	17.8	83	N	20	8.9	.....	0	5ks	.....	N	0	0	Fair	
Umatilla, Oregon	29.47	748.5	.....	.....	50	10.0	65	SW	12	5.4	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	40	4.4	100	SE	.....	.....	4	.....	10s	.....	SE	0	0	Cloudy	
Uvalde, Texas	29.14	740.1	29.94	760.5	68	20.0	84	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.92	760.0	30.18	766.6	58	14.4	94	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.01	609.8	29.49	749.0	43	6.1	75	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Visalia, California	29.68	753.9	30.05	763.3	66	18.3	93	SW	4	1.8	.....	.....	10s	....	W	0.09	2.3	Cloudy	
Washington, D. C.	29.86	758.4	29.97	761.2	54	12.2	83	N	10	4.5	.....	2ck	2ks	N	N	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	49	9 4	51	N	.....	.....	1	0	0	....	.....	0	0	Clear	
Wilmington, N. Carolina	29.86	758.4	29 94	760.5	55	12.8	87	N	11	4.9	.....	0	0	.....	.....	0.70	17.8	Clear	
Winnemucca, Nevada	25.52	648.2	29.88	758.9	47	8.3	84	S	2	0.9	.....	10k	0	Calm	.....	0	0	Cloudy	
Wood's Holl, Mass	29.85	758.2	29.90	759.4	54	12.2	93	E	6	2.7	.....	.....	10a	... .	NE	0.06	1.5	Light rain	
Yankton, Dakota	28.58	725.9	29.85	758.2	52	11.1	41	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.72	754.9	29.88	758.9	69	20.6	38	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.88	758.9	29.94	760.5	20.5	— 6.4	93	NE	12	5.4	.....	8c	0	NE	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.93	760.2	29.95	760.7	79	26.1	90	N	2.4	1.1	.....	.....	10n	.....	N	0.13	3.3	Thunder-storm	Chas. Hasselbrink.
Santiago de Cuba, W. I	29.88	758.9	29.91	759.7	79	26.1	90	Calm	0	0	.....	4c	4k	... .	E	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	86	30.0	83	NE	4	1.8	.....	2c	5ks	E	.....	0	0	Clear?	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	81	27.2	87	Calm	0	0	.....	2c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.84	757.9	29.92	760.0	83	28.3	.....	SE	4.5	1.9	.....	.....	.....	.....	.....	0.01	0.3	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.98	761.5	29.98	761.5	84	28.9	76	NE	.....	.....	2	8c	5k	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	65.5	18.6	85	Calm	0	0	.....	.....	10s;ks	.....	.....	0.06	1.5	.....	Thomas Herran.
Portland, Jamaica, W. I	29.93	760.2	30.24	768.1	73	22.8	90	SE	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.15	765.8	70	21.1	70	21.1	90	N	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.01‡	762.2‡	.....	.....	46	7.8	84	NE	8	3.6	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.05*	763.3*	55	12.8	54	12.2	61	N	.....	.....	5	.....	2ck	.....	WNW	0	0	.....	.....	Fair.....	
Adams. S. 37° 32′, W. 78° 57′.....	30.07	763.8	63	17.2	56	13.3	94	WNW	.....	.....	3–4	.....	8	.....	WNW	.....	.....	Smooth	WNW	Cloudy.....	
Alaska. S. 22° 18′ W. 74° 51′.....	30.12	765.0	65	18.3	59	15.0	82	SSE	.....	.....	3	.....	8	.....	SE	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	30.07‡	763.8‡	.....	.....	72	22.2	54	W	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Ashuelot. N. 33° 56′, E. 130° 53′.....	30.33	770.4	69	20.6	65	18.3	100	NE	.....	.....	2	.....	8	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.10	764.5	49	9.4	65	18.3	84	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	29.95*	760.7‡	.....	.....	52	11.1	79	NE	30	13.4	.....	.....	10	.....	NE	0	0	.....	.....	Misty.....	
Constitution, Havre, France.....	.....	.....	.....	.....	53	11.7	100	NNW	.....	.....	2	.....	3	.....	ESE	.....	.....	.....	.....	Pleasant.....	
Despatch, Constantinople, Turkey	30.14‡	765.5‡	.....	.....	71	21.7	71	NNE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, S. 37° 31′, W. 3° 48′.....	30.18	766.6	58	14.4	58	14.4	100	NNE	.....	.....	6	.....	5	.....	NNE	.....	.....	Mod'ate	NE	Fair.....	
Franklin, Norfolk, Va.....	29.95	760.7	69	20.6	59	15.0	100	NNW	24	10.7	.....	.....	8	.....	N	1.	25.	.....	.....	Fair.....	
Gettysburg N. 32° 11′ 00″, E. 29° 35′ 30″	30.01‡	762.2‡	.....	.....	79	26.1	95	NE	.....	.....	2	.....	1	.....	Calm	3.	76.	Light	E	Clear.....	
Guard. S. 5° 31′, W. 33° 33′.....	30.08	764.0	81	27.2	80	26.7	78	ESE	....	.....	4	.....	8	.....	ESE	.....	.....	Long	ESE	Cloudy.....	
Hartford, Santo, Brazil.....	30.00	762.0	.....	.....	67	19.4	84	N	3.6	1.6	.....	.....	10	.....	.....	0.62	15.7	Smooth	.....	Cloudy.....	
Marion, Trieste, Austria.....	30.16	766.1	67	19.4	66	18.9	68	E	.....	.....	2	.....	10	.....	W	Light	Light	.....	.....	Cloudy.....	
Michigan, Erie, Pa.....	30.04†	763.0†	.....	.....	48	8.9	70	NNE	.....	.....	6	.....	2	.....	NNE	.....	.....	.....	.....	Fair.....	
Monocacy, Yokohama, Japan	30.10‡	764.5‡	.....	.....	55	12.8	56	N	.....	.....	3–5	.....	5	.....	N	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.....	30.12	765.0	64	17.8	62	16.7	94	N	23	10.3	.....	.....	8	.....	.....	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	61	16.1	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.45	773.4	61	16.1	52	11.1	79	S	.....	.....	2	.....	2	.....	NW	.....	.....	.....	.....	Fair.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	54	12.2	93	NW	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Plymouth. N. 32° 22′, W. 62° 40′.....	30.13	765.3	80	26.7	80	26.7	70	S	.....	.....	4	.....	2	.....	SSW	.....	.....	Light	S	Clear.....	
Powhatan, Portsmouth, N. H.....	30.06‡	763.5‡	.....	.....	48	8.9	85	NE	6	2.7	.....	.....	2?	.....	NE	2.	51.	.....	.....	Cloudy.....	
Ranger, Hong-Kong, China.....	30.21	767.3	81	27.2	81	27.2	83	WNW	.....	.....	3	.....	8	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.98	761.5	72	22.2	72	22.2	100	NW	.....	.....	1	.....	Fog	.....	Calm	.....	.....	.....	.....	Foggy.....	
Santee, Annapolis, Md	29.95‡	760.7‡	.....	.....	55	12.8	80	N	.....	.....	3	.....	10	.....	NE	0	0	.....	.....	Overcast.....	
Saratoga, Philadelphia, Pa.....	29.90	759.4	.....	.....	51	10.6	79	N	.....	.....	5	.....	6	.....	NE	0	0	.....	.....	Cloudy	
St. Louis, League Island, Pa.....	29.86	758.4	58	14.4	55	12.8	69	NNE	7	3.1	.....	.....	5	.....	NNE	0	0	.....	.....	Fair.....	
Supply, Havre, France.....	30.34	770.6	60	15.6	59	15.0	59	NNW	.....	.....	1	.....	2	.....	NNW	.....	.....	.....	.....	Clear	
Swatara, Boston, Mass.....	30.00‡	763.0‡	.....	.....	53	11.7	93	NNE	.....	.....	3	.....	10	.....	NNE	.....	.....	... ...	.....	Rainy.....	
Trenton, N. 35° 55′, W. 40° 31′.....	30.08‡	764.0‡	.....	.....	66	18.9	94	WSW	.....	.....	3	.....	2	.....	E	0	0	Smooth	.....	Clear.....	
Tuscarora. N. 34° 20′, W. 119° 43′	29.80	756.9	62	16.7	61	16.1	82	WNW	.....	.....	4	.....	8	.....	Calm	0	0	Mod'ate	WNW	Fair.....	
Vandalia, Gibraltar.....	30.10‡	764.5‡	.....	.....	69	20.6	70	WSW	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	49	9.4	93	NE	6	2.7	.....	.....	5	.....	.....	0.03	0.8	.....	.....	Drizzling.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Red iced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.			CHARACTER.	DIRECTION FROM—		
											Up'er	Low'r	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From -	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking, N. 35° 55', W. 177° 13'		30.18*	766.6*	71	21.7	100	SE			4		2		SE	Light	Small	SE	Misty	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 8° 45', W. 84° 34'		29.97*	761.2*	78	25.6	100				4		10		Calm		Small	Confused	Raining	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 42° 17', W. 124° 45'		29.90*	759.4*	54	12.2	74	SW			2		4		SW	Blank	Heavy	WSW	Cloudy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 40° 30', W. 72° 00'		29.84*	757.9*	58	14.4	100	ENE			6					Mod'rate	Mod'rate	E	Raining	Capt. W. H. Thompson.
S. S. Celtic																			Capt. R. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. *Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Ridley.
S. S. Oceanic, N. 29° 32', E. 126° 47'		30.09	764.3	73	22.8	81	N			4		6		NW		3	N	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana. N. 40° 06′ W. 72° 30′		29.49*	749.0*	60	15.6	94	NNE			7		10		NNE	Heavy	Heavy	Cross	Cloudy	Captain Sargent.
S. S. Ohio. N. 51° 16′, W. 21° 20′		29.70	754.4	59	15.0	94	SSW			6		10		SSW	Mod'ate	Heavy	SSW	Misty	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Laguayra, Venezuela		29.89	759.2	87	30.6	69	ENE	3	1.3			8k		Calm	0	Swell	NE	Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 13, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			30.02	762.4	73.9	23.3	85	NE			6		1			0	0	Very fair	Kesxuche.
Algiers			29.97	761.2	69.8	21.0	82	NE			1		7			0.240	6.1	Very cloudy	Tourillere.
La Calle			29.99	761.7	69.6	20.9	81	W			6		7			0.268	6.8	Very cloudy	Foufrede.
Tunis			29.99	761.9	81.0	27.2	48	WSW			5		10			0.340	8.8	Covered	Jacques.
Sfax			30.10	764.5	80.6	27.0	.....	ENE			3		10			0	0	Covered	Gau.
Saida			30.01	762.3	69.8	21.0	41	N			1		1			0	0	Very fair	Herbin.
Tebessa			30.01	762.2	72.0	22.2	43	N			6		7			Inap.	Inap.	Very cloudy	Watrin.
Geriville			30.00	761.9	68.0	20.0	53	S			3		0			0	0	Clear	Brugniaux.
Laghouat			30.09	764.2	72.3	22.4	72	NW			1		1			0	0	Very fair	Bertrand.
Biskra			30.04	763.1	77.9	25.5	58	NNW			1		8			0	0	Very cloudy	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.68	751.2	30.12	765.1	59.7	15.4	75	NE			2		10			0.91	23.0	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.53	750.0	30.30	769.7	52.9	11.6	94	NW			1		10			0.382	9.7		Dr. Wierzbiski
Eperies	29.31	744.5	30.19	766.7	58.6	14.8	71	Calm			0		10n			0.098	0.25		Julius Mikolik.
Gratz	28.95	735.3	30.21	767.3	54.1	12.3	90	W			2		10			0.126	3.20		Andreas Rospini.
Hermannstadt	28.71	729.2	30.17	766.4	64.6	18.1	48	SE			3		4			0	0		Prof. A. Gottschling.
Kremsmünster	28.91	734.3	30.28	769.0	48.9	9.4	91	NE			2		10			0.354	9.0		Prof. C. Wagner.
Lemberg	29.22	742.3	30.21	767.2	58.3	14.6	82	E			1		8			0	0		Dr. T. Stanecki.
Pola	29.90	759.5	30.02	762.4	57.6	14.2	100	SE			1		10s			0.472	12.0		I.R.Hydrographic Office.
Szathmar	29.75	755.7	30.21	767.4	68.5	20.3	63	SE			2		9			0	0		Julius Csics, S. J.
Szegedin																0.024	0.60		Karl Stancel.
Trieste	29.95	760.7	30.05	763.3	61.9	16.6	76	ENE			2		10			0.614	15.6	Raining	P. Busin.
Vienna	29.54	750.2	30.26	768.6	52.9	11.6	86	NW			2		10			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.64	732.5	30.37	771.5	49.8	9.9	70	ENE			2		5			0	0		Prof. M. Passau.
Brussels	30.17	766.4	30.38	771.0	55.4	13.0	65	SE			2		1		NE	0	0		Royal Observatory
Furnes	30.37	771.5	30.40	772.1	60.1	15.6	60	S			2		5			0	0		M. E. de Cae
Maeseyck	30.24	768.2	30.37	771.5	58.1	11.7	77	S			2		1			0	0		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

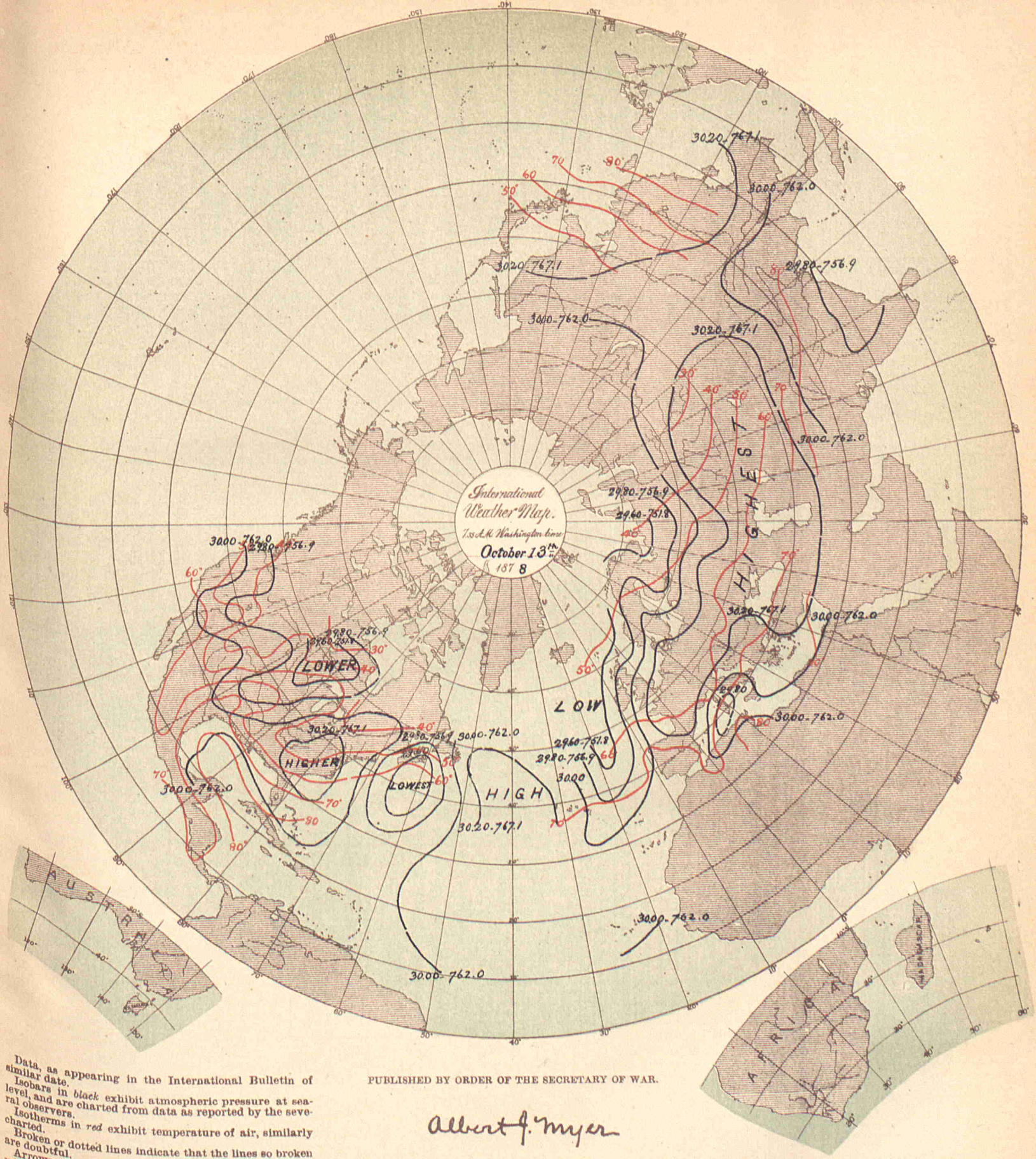
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.90	759.4	30.00	762.0	56.8	13.8		S	16	7.2			5			0	0	Blue sky	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			29.97	761.2	56.2	13.4		S	17	7.6									S. Call.
Bidston, (Liverpool Obs.)			30.16	766.1	57.2	14.0		SSE	13	5.8			5					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.98	761.5	83.5	28.6		SW			1		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			30.31	769.9	60.0	15.6		S			1		10					Hazy	H. Todd.
Cardington			30.32	770.1	59.0	15.0		SE			1		4					D. clouds	John McLaren.
Chatham, School M. E.	30.20	767.1	30.32	770.1	63.2	17.3		SW			3		4					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.72	729.5	30.20	767.1	53.8	12.1		SE			4		3					Fine	Alexander Watt.
Donaghadee	29.98	761.5	30.00	762.0	55	12.8		S			5		8					D. clouds	J. Mac Gowan.
Dover	30.31	769.9	30.34	770.6	57	13.9		SSW			2		3					¼ clouded	J. Costello.
Falmouth, Observatory	29.98	761.5	30.21	767.3	57.8	14.3		SSE			4		7					Overcast	The Staff.
Fort Napier, (Natal)	27.73	704.3	30.05	763.3	68.4	20.2		S			4		1					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.70	751.4	29.93	760.2	86	30.0		W			0		3					D. clouds	
Galway, Queen's College			29.79	756.7	59	15.0		SSW			6		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.98	761.5	30.04	763.0				E			4		1					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.82	757.4	30.02	762.5	56.9	13.8		SSW			6		8					Gloomy	D. G. Maclean.
Great Yarmouth	30.31	769.9	30.32	770.1	59	15.0		WSW			3		3					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	30.15	765.8	30.33	770.4	61.4	16.3		S			1		4					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.05	763.3	30.27	768.8	58	14.4		ESE			3		0					Blue sky	Dr. S. E. Hoskins, F. R. S.
Helston			30.28	769.1	60	15.6		S			6		2c			0	0	Fine	M. P. Moyle.
Holyhead	30.05	763.3	30.10	764.5	58	14.4		SSW			6		8					D. clouds	John Tilston.
Jersy	30.06	763.5	30.33	770.4	57.0	13.9		SE			3		2					D. clouds	J. Fisher.
Kew, Observatory	30.28	769.1	30.32	770.1	59.2	15.1		S	17	7.6			8					D. clouds	The Staff.
Kingstown	30.01	762.2	30.04	763.0	57	13.9		S			5		9					Overcast	George Mitchell.
Leicester, Museum			30.27	768.8	58.0	14.4		SW			2		2					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.90	759.4	29.98	761.5	74	23.3		E			3		4					D. clouds	Sergt. Beckett.
Nairn	29.81	757.2	29.90	759.4	58	14.4		SW			2		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.02	762.5	79.2	26.2		NE			3		10					Overcast	C. S. Duncombe.
Nottingham, Observatory	30.11	764.8	30.30	769.6	60.5	15.8		S			3		5c;ck		S	0.010*	0.25*	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.71	754.6	30.23	767.8	58.0	14.4		S			6		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.28	769.1	59	15.0		S			2		0					Blue sky	H. E. Bellamy.
Plymouth	30.17	766.3	30.24	768.1	58.2	14.5		SSW			4		1					D. clouds	John Merrifield.
Roche's Point	29.94	760.5	29.98	761.5	58	14.4		SSW			6		10					Dull	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.)			29.82	757.4	57.2	14.0		S	26	11.6			5					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.15	765.8	70.5	21.4		NE			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.96	761.0	30.24	768.1	57.2	14.0		SW			4		5			0	0	D. clouds	W. F. Cooper.
Silloth, Rectory	30.06	763.5	30.09	764.3	60.9	16.1	68	SW			5		6			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.79	756.7	30.20	767.1	55.4	13.0		S			4		7					Hazy	Rev. S. J. Perry.
Stornoway, Lews (C., Hebr.)																			John Sutherland.
Stratfield Turgiss	30.10	764.5	30.32	770.1	60.2	15.7		W			2		6					D. clouds	Rev. C. H. Griffith, F. M. S.
Thurso	29.79	756.7	29.85	758.2	57	13.9		S			4		7					D. clouds	John Trotter.
Truro, Royal Institution			30.18	766.6	60	15.6		SE			7		6					D. clouds	W. Newcombe.
Valencia, Observatory	29.84	757.9	29.56	758.4	57.6	14.2		SSE	47	21.0			10					Squally	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.42	747.3	55.0	12.8	82	N			1		8kn			0.01	0.3	Thunder	Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.8	76.1	24.5	66	ENE	13.5	6.0		0	1		E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.64	752.8	29.73	755.1	67.6	19.8	44	N	20	8.9			6			0	0	Lightning	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m. *Dew

MARINE SERIES. VESSELS.	Barometer corrected. Inches.	Millimeters.	Reduced. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind from—	Miles per hour.	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper from—	Lower from—	Sea or swell. Height scale 0—9	Direction from—	Weather.	Observer.
Brig Catherine, N. 41° 55', W. 58° 20'			29.72	754.9	69	20.6		SSE			8		9			6	Confused.	Overcast	Capt. Alex. Wilson.
Barque Commewyne, N. 10° 30', W. 53° 50'			29.99	761.7	85	29.4		S			4		2			2	S	Blue sky	Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 20° 25', W. 65° 15'			29.95	760.7	87	30.6					2		3				N	D. clouds	Capt. D. W. A. Qualle.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			Mr. Ansart.
San José	26.26	667.0	29.98	761.5	68.0	20.0	95	NE			1		9s		NW	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.21	767.2	30.25	768.4	55.9	13.3	64	NW			4		1						
Faröe	30.27	768.9	30.29	769.4	57.0	13.9	76	W			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.49	749.0	29.52	749.9	53.8	12.1	95	SW			7		10						Raining.
Vestervig	30.06	763.4	30.23	767.7	56.1	13.4	77	WNW			4		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.85	758.1	30.40	772.1	53.6	12	77	NE			1		2		NW	0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.24	768.2	30.35	771.0	57.2	14.0	74	SW			2		0			0	0	Clear	Bonvallet, Director.
Avignon, Normal School	29.89	759.2	29.97	761.2	60.8	15.7	53	N			6		0			0	0	Very clear..	M. Giraud, Director.
Bar-sur-Seine																			C. Saillard.
Beaumette Obs'y Angers)																0.024	0.6		Albert Chenx.
Beauvais, Normal School	30.10	764.4	30.38	771.7	54.5	12.5	68	E			2		0			0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.37	746.1	30.28	769.1	54.1	12.3	73	NE			6		2		SSE	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.29	744.0	30.22	767.5	55.6	13.1	62	N			4	2c		NE		0	0	Slightly cl'dy	M. Marlot, Director.
Bourges, Normal School	29.70	754.4	30.26	768.6	52.5	11.4	95	NE			3		2k		NW	0	0	Slightly cl'dy	A. Wagner, Director.
Brest, Naval Observatory	29.94	760.4	30.18	766.6	59.4	15.2	66	SSE			3		1k		SSE	0	0		The Staff.
Carcassonne, Normal School	29.69	754.1	30.10	764.5	64.8	18.2	80	W			2		0			0	0	Clear	Septembre, Director.
Caen	30.32	770.2	30.40	772.1	58.5	14.7	72	SSE			4		0			0	0	Very clear..	M. Lair, Director.
Chartres, Normal School	29.71	754.7	30.29	769.3	56.1	13.4	86	NE			1		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	30.01	762.3	30.33	770.4	50.7	15.4	58	ESE			1		5ok		E	0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.87	733.2	30.23	767.8	56.1	13.4	53	N			1		10		NE	0	0	Covered	Allnard, Director.
Commercy, Normal School	29.45	748.1	30.35	770.8	52.2	11.2	61	ENE			1		ok		ENE	0	0		Dr. Coulet, Director.
Commune de Grèsque*	28.83	732.2	29.97	761.2	60.4	15.8	55	NW			2		2	SW		0	0	¼ covered	W. Kina.
Grenoble, Normal School	29.24	742.8	30.02	762.4	53.6	12	66	NW			4		8k		N	0	0	Very cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	30.03	762.7	30.34	770.6	55 6	13.1	63	SE			3		2		SE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.27	743.4	30.19	766.8	56.5	13.6	50	NE			4		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	30.20	767.0	30.30	769.5	58.6	14.8	53	SE			4				SE	0	0		T. Carré, Director.
Mâcon, Normal School	30.23	767.7	30.26	768.6	55.0	12.8	79	NE			4		0			0	0	Clear	M. Galzin, Director
Mirecourt, Normal School	29.26	743.3	30.32	770 1	52.0	11.6	61	NNW			4		5k		SSE	0	0	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.80	756.8	30.00	761.0	64.4	18	35	N			6		0			0	0	Clear	Boyer, Director.
Privas, Normal School	29.04	737.5	30.10	764.5	58.6	14.8	70	N			3		2	S	N	0	0	Slightly cl'dy	M. Cantier.
Puy de Dome (Summit)	25.27	641.9			34.2	1.2	78	NE			6		8			0	0		Allnard, Director.
Rochefort, Naval Obs'y	30.24	768.2	30.28	769.0	60.3	15.7	62	ESE			3		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	30.27	768.9	30.36	771.1	60.3	15.7	63	ESE			3		0			0	0	Clear	F. Lucard, Director.
Saint Malo (Port)			30.30	769.5	61.5	16.4	60	SE			3		1		SE	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	30.18	766.5	30.34	770.7	57.2	14.0	57	ENE			2		1		E	0	0		E. Renou.
Tarbes, Normal School	29.17	740.9	30.23	767.8	64.4	18	71	S			1		2	NW	W	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.54	750.4	30.26	768.6	58.1	14.5	72	NNE			4		2		NE	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SKIRTS.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	81.0	27.2										0	0		L'Abbé Marchès.
Lyons, Observatory			30.04	763.0									3			0	0		
Marseilles, Observatory			29.92	760.0	63.9	17.7	43	NW			2		0			0	0		The Staff.
Mont-Louis	24.95	633.8	30.27	768.8	51.8	11.0	26	NW			3		0			0	0		M. Cave.
Nice			29.90	759.5	66.6	19.2	76	W			1		5					Rainy	Dr. A. Niepce.
Perpignan	30.06	763.5	30.34	770.5	57.2	14.0	53	ESE			3		3		ESE	0	0		Marié Davy, Director
Pic du Midi, (Summit,) H. P.			30.05	763.2	67.6	19.8	26	NE	28.0	12.50			0			0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.																			M. Baylac.
Toulouse, Observatory	22.62	574.5			39.4	4.1		NE			1		1			0	0	Clear	Gen'l de Nansouty
Tours	29.51	749.5	30.24	768.0	59.7	15.4	42	NNW			2		0			0	0		The Staff.
Versailles																			C. Marquet.
Zi-Ka-Wei, (near Shanghai)			30.36	770.8	57.6	14.2	37	E			2		1			0	0	Clear	Dr. A. Bérigny.
	30.25	768.4	30.28	769.1	62.1	16.7	77	NNE	2.0	0.9			10n			0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèsque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèsque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.38	746.2	30.23	767.8	53.2	11.8	56	E			3		1	E		0	0		Prof. Dr. Hoh.
Berlin	30.17	766.4	30.35	770.8	57.2	14.0	60	W			1		4			0.008	0.2		Prof. Arndt.
Breslau	29.83	757.7	30.37	771.4	55.0	12.8	67	WNW			2		9			0	0		Royal University Obs'y
Carlsruhe	29.89	759.1	30.32	770.2	53.6	12.0	77	NE			1		10			0	0		Albert Senz.
Cassel	29.76	755.8	30.37	771.4	55.0	12.8	65	NE			1		2	NE		0	0		Dr. H. Möhl.
Crefeld	30.23	767.9	30.40	772.1	52.0	11.1	82	N			1		3			0.08	2.		Director Lose.
Emden	30.38	771.7	30.42	772.6	57.2	14.0	72	W			1		0			0	0		Prof. Prestel.
Frankfort on the Main	30.00	762.0	30.37	771.3	58.6	14.8		N			2		5			0	0		Physical Society.
Friedrichshafen	28.78	730.9	30.23	767.7	52.9	11.6	60	NE			8		7	NE		0	0		M. Wilhelm.
Hamburg	30.30	769.6	30.37	771.4	56.5	13.6	68	NW			2		6k			0.012	0.3	Fair	Captain F. Hegemann.
Kiel	30.31	769.9	30.33	770.3	56.7	13.7	67	W			2		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.14	765.6	30.23	767.7	53.8	12.1	81	W			2		6			0	0		Prof. E Luther.
Köslin			30.21	767.3	54.5	12.5		W			4		4			0.087	2.2		H. Müller.
Leipsic, Observatory	29.96	761.0	30.39	771.8	56.8	13.8	57	NNE			1		7			0	0		Prof. Brulns.
Memel, Naval School	30.11	764.7	30.15	765.9	55.4	13.0	81	WSW			5		10ks					Squally	Reinbrecht and Skalweit.
Neufahrwasser	30.22	767.6	30.24	768.0	57.2	14.0	74	SSW			3		8			0.083	2.1		A. Lothes.
Posen	30.06	763.5	30.35	770.9	57.2	14.0	60	NW			4		9			0	0		Dr. Magener.
Strassburg (in Alsace)	29 78	756.3	30.33	770.4	54.5	12.5	71	NNE			4		1			0	0		Astronomical Observatory.
Stuttgart	29.35	745.5	30.30	769.7	53.6	12.0	59	NE			1		3	E		0	0		Prof. Schoder.
Treves, (Trier)	29.79	756.7	30.32	770.1	55.2	12.9	61	N			2		4			0	0	Dense fog	Prof. Flesch.
Weissenburg, (Bavaria)	28.80	731.4	30.30	769.7	50.5	10.3	67	ENE	2.5	1.1			5ck		E	0	0		Dr. Von Bebber.
Wustrow, Naval School	30.29	769.3	30.31	769.9	56.5	13.6	75	WNW			5		2ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.80	756.8	30.17	766.4	76.3	24.6		NE			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.44	747.8	29.91	759.7	89.5	31.9	44	W					0			0	0	Blue sky	
Bombay	29.79	756.6	29.82	757.5	86.4	30.2	80	NNW	17	7.3			6	NNW		0	0	D. clouds	
Poona	27.90	708.5	29.87	758.6	86.8	30.4	33	N					0			0	0	Blue sky	
Lahore	28.09	713.5	29.82	757.4	88.9	31.6	36	N	0.7	0.3						0	0	Blue sky	
Belgaum	27.33	694.1	29.84	758.0	80.7	27.1	54	E	2	0.9			3	E		0	0	D. clouds	
Roorkee	28.93	734.8	29.82	757.5	80.8	27.1	60	Calm	2	0.9						0	0		
Agra	29.26	743.3	29.82	757.3	92.6	33.7	40	N								0	0		
Nagpur	28.76	730.4	29.78	756.5	86.8	30.4	45	Calm	3.7	1.6			5	E	SE	0	0	D. clouds	
Lucknow	29.45	748.1	29.82	757.4	83.8	28.8	58	Calm	0.8	0.4						0	0	Blue sky	
Allahabad	29.50	749.3	29.81	757.2	81.0	27.2	62	Calm	0.7	0.3			0			0	0	Blue sky	
Patna	29.65	753.0	29.83	757.6	84.6	29.2	72	Calm	0.3	0.1			2			0	0		
Hazaribagh	27.81	706.4	29.82	757.5	78.8	26.0	59	ENE	4.4	2.0			2			0	0		
Cuttack	29.69	754.1	29.77	756.1	82.0	27.8	78	ENE	3.4	1.5			5					Drizzling	
Calcutta (Alipore)	29.79	756.6	29.81	757.2	83.7	28.7	81	ENE	3.0	1.3			2			0	0	D. clouds	
Goalpara	29.43	747.5	29.82	757.4	81.9	27.7	75	ENE	9	4.0			0			0	0	Blue sky	
Chittagong	29.77	756.1	29.86	758.5	81.1	27.3	90	SW	3.6	1.6			4			0	0	Misty	
Sibsagar	29.52	749.8	29.86	758.4	79.0	26.1	76	NE	2.1	0.9			8	SSE	SSE	0	0	D. clouds	
Jubbulpore	28.47	723.0	29.82	757.5	83.8	28.8	51	Calm	1.4	0.6			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.8 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.68	753.8	30.09	764.2	59.0	15.0	78	NE	1.8	0.8	.....	.....	10	.....	.....	0.020	0.5	.....	Prof. Giovanni Clodig.
Padua	29.92	760.0	30.03	762.8	57.7	14.3	89	NE	22.4	10.0	.....	.....	10	.....	.....	0.441	11.2	.....	Prof. Dott. Lorenzoni
Vicenza	29.87	758.6	30.06	763.4	58.5	14.7	90	ENE	4.9	2.2	.....	.....	10	E	.....	0.992	25.2	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.51	749.5	30.02	762.5	52.0	11.1	90	NNW	.....	.....	2	.....	10	ESE	.....	1.591	40.4	.....	Prof. Schiaparelli.
Moncalieri	29.13	739.9	30.03	762.8	59.4	15.2	62	NNW	3.1	1.4	.....	.....	3	SE	.....	0.374	9.5	.....	Prof. P. F. Denza.
Mondovi	28.13	714.6	30.04	763.0	52.0	11.1	75	W	.....	.....	4	.....	8	N	.....	0.134	3.4	.....	Prof. D. C. Bruno.
Porto Maurizio	29.71	754.6	29.93	760.2	65.1	18.4	32	NE	.....	.....	6	.....	7	SW	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.77	756.1	29.94	760.4	56.8	13.8	75	N	12.5	5.6	.....	.....	10	S	.....	0.543	13.8	.....	Prof. G. M. Garibaldi.
Parma	29.68	753.8	29.99	761.7	55.9	13.3	95	N	.....	.....	4	.....	10	.....	.....	1.638	41.6	.....	Prof. P. Pigorini.
Florence	29.65	753.1	29.90	759.5	60.8	16.0	86	E	.....	.....	2	.....	10	.....	.....	1.000	25.4	.....	Cav. F. Meucci
Leghorn	29.77	756.2	29.85	758.3	58.5	14.7	59	NE	9.4	4.2	.....	.....	10	.....	.....	1.638	41.6	.....	Prof. P. Monte.
Pesaro	29.91	759.7	29.96	760.9	59.4	15.2	93	E	8.9	1.7	.....	.....	10	.....	.....	0.709	18.0	.....	Prof. Luigi Guidi.
Urbino	28.47?	723 1	30.01?	762.3?	56.5	13.6	89	SW	.....	.....	1	.....	10	.....	.....	0.295	7.5	.....	Prof. P. Serpieri
Rome	29.69	754.1	29.86	758.5	65.7	18.7	80	S	4.3	1.9	.....	.....	10	.....	.....	3.504	89.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.80	756.8	29.99	761.8	70.7	21.5	63	S	.....	.....	6	.....	10	S	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.86	758.5	30.11	764.8	70.2	21.2	64	SE	12.5	5.6	.....	.....	4	SE	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.68	753.8	29.87	758.6	73.9	23.3	65	SW	.....	.....	2	.....	8	SW	.....	0.016	0.4	.....	Prof. A. Pacinotti.
Cosenza	29.18	741.2	30.05	763.3	71.6	22.0	72	SE	7.4	3.3	.....	.....	5	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.76	755.8	30.00	762.1	68.7	20.4	73	WSW	1.3	0.6	.....	.....	10	.....	.....	0.087	2.2	.....	Prof. G. Cacciatore.
Syracuse	30.04	762.9	30.11	764.8	72.7	22.6	68	S	7.4	3.3	.....	.....	8	WSW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	30.02	762.5	30.22	767.6	63.2	17.3	70	ENE	1.0	0.47	.....	.....	10s	.....	.....	0.440	11.18	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	30.23	767.8	30.30	769.6	48.4	9.1	85	SE	5.4	2.4	.....	1cs	0	W	.....	0	0	Fair	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.1	18.4	70	N	.....	.....	3	0	2s	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.09	637.2	30.09	764.3	51.8	11.0	68	SW	.....	.....	1	0	1	.....	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.47	621 6	30.00	763.6	56.5	13.6	80	W	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.17	588.4	30.16	766.0	55.4	13.0	88	NW	2.2	1.0	.....	0	10k	.....	E	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	54.5	12.5	83	W	.....	.....	1	1c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.91	759.7	29.92	760.0	76.8	24.9	91	SW	.....	.....	1	8	0	SE	.....	0.099	2.5	Cloudy	M, M. Cházaro.
San Luis Potosi	24.27	616.7	30.19	766.7	69.0	15.0	55	E	.....	.....	.....	3	4	W	E	0	0	Misty	G. Barroeta, M. D.
Vera-Cruz	29.98	761.7	30.01	762.4	77.0	25.6	83	Calm	0	0	.....	0	6sk	.....	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.3	30.08	764.1	50.0	10.0	83	NNW	.....	.....	.....	1	0	Calm	.....	0	0	.....	Prof. P. Spina.
Durango	24.14	613.2	30.02	762.6	59.2	15.1	81	SW	.....	.....	2	0	0	.....	.....	0	0	Foggy	M. V. de Leon, C. E.
Colima	28.35	720.0	30.01	762.2	79.2	26.2	85	NE	0.8	0.4	.....	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.40	772.2	30.40	772.2	59.7	15.4	.....	SE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Groningen	30.33	770.3	30.38	771.7	56.3	13.5	.....	WSW	.....	.....	2	.....	.....	.....	.....	0.012	0.3	.....	
Helder	30.35	770.9	30.35	770.9	58.8	14.9	.....	SSW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.38	771.7	30.38	771.7	63.1	17.3	76	SSE	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.34	770.5	30.38	771.7	58.1	14.5	70	W	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	H. v d Broek
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.66	753.4	29.72	754.8	54.7	12.6	77	S	17.9	8.0	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.89	759.1	29.93	760.1	50.7	10.4	80	SW	18	8	.....	.....	5	.....	.....	0.197	5.0	.....	
Christiania	29.95	760.7	30.10	764.4	54.7	12.6	64	Calm	0	0	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.67	753 6	29.71	754.7	41.0	5.0	87	Calm	0	0	.....	.....	10	.....	.....	0.256	6.5	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.79	756.6	29.98	761.4	64.0	17.8	77	NNE	16.1	7.2	.....	.....	5	.....	.....	0.630	16.0	.....	Dr. J. A. Sampaio.
Campo Major	29.11	739.3	30.11	764.8	72.1	22.3	30	SE	8.7	3.9	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.04	763.0	30.13	765.2	73.0	22.8	60	SW	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.74	755.5	30.10	764.4	70.8	21.3	40	ESE	3.8	1.7	.....	.....	1	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.91	759.6	29.94*	760.4*	70.5	21.4	92	SW	25.5	11.4	.....	.....	10	.....	.....	0.020	0.5	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m. *Probably 29.98 in. and 761.4 mm.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.96	761.0	81.7	27.6	.....	W	.....	.....	3	.....	5	.....	W	1	.....	D. clouds....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	30.00	761.9	80.4	26.9	.....	Calm	.....	.....	0	.....	10	.....	.....	1	.....	Showery.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeirá gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.7	30.01	762.3	68.9	20.5	55	SSW	2.0	0.89	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.10	764.5	30.15	765.9	72.0	22.2	53	SE	3.7	1.65	.....	.....	.....	.....	.....	0	0	Clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.20	690.9	.....	.....	60.4	15.8	77	N	5.6	2.52	.....	.....	.....	.....	.....	0.197	5.0	Clear.	Domingo Martin y Peres
Madrid, Royal Observatory	27.92	709.1	30.11	764.8	69.8	21.0	47	SE	4.5	2.00	.....	1	0	NW	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.97	761.3	30.12	765.0	76.0	24.8	50	ESE	2.1	0.94	.....	2	5	ESE	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.15	740.5	30.02	762.6	72.0	22.2	63	SW	4.3	1.94	.....	1	0	.....	.....	0	0	Almost clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.5	30.01	762.2	76.6	24.8	84	E	1.1	0.5	.....	10pc	3k	.....	E	0.224	5.7	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.99	761.8	30.09	764.2	78.3	25.7	43	E	20.4	9.1	.....	2	4	NNW	SE	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.84	757.9	29.93	760 2	79.5	26.4	91	SW	0	0	.....	1s	2k	SE	SE	0	0	Clear	Leonardo de Toledo, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 861 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.77	756.2	29.81	757.2	43.5	6.4	.....	N	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.81	757.1	29.86	758.4	56.5	13.6	73	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	29.89	759.3	29.95	760.6	57.6	14.2	51	NW	.....	.....	4	.....	1	.....	.....	0	0	.....	
Stockholm	29.85	758.2	30.03	762.7	55.8	13.2	66	SW	.....	.....	2	.....	2	.....	.....	Inap	Inap.	.....	
Wisby	29.96	761.0	30.02	762.5	53.6	12.0	84	NW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.94	760.4	30.01	762.3	57.4	14.1	64	NW	.....	.....	.....	.....	0	.....	.....	0.010	0.25	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.68	728.5	30.11	764.8	53.1	11.7	60	NE	.....	.....	7	.....	9	.....	.....	0	0	Covered	The Observatory.
Zurich	28.60	726.5	30.25	768.4	50.7	10.4	72	SE	.....	.....	2	.....	9	.....	E	0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.3 mm.; Thermometer, —1.6 cent.; Relative Humidity, —11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.23	767.8	67.3	19.6	60	NE	9	4.0	.....	.....	3	.....	ENE	0	0	.....	The Observatory.
Valona	.....	.....	30.19	766.8	74.8	23.8	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.94	760.5	30.06	763.4	80.2	26.8	45	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B																			Hon. J. Ferguson.
Brockville, Ontario	29.82	757.4	30.13	765.3	47	8.3	.....	Calm	0	0	.....	0	0	.....	.....	0.01	0.3	Clear	W. R. Bigg.
*Chatham, N. B	29.76	755.9	29.82	757.4	41	5.0	91	N	15	6.7	.....	.....	10n	.....	N	0.63	16.0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.52	749.8	29.56	750.8	51	10.6	96	NE	18	8.0	.....	.....	10n	.....	Calm	1.755	45.34	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	30.09	764.3	39.8	4.3	93	N	.....	.....	1	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	29.76	755.9	29.92	760.0	42.3	5.7	91	W	.....	.....	1	.....	.....	.....	.....	0.25	6.3	Clearing	H. A. Johnson.
Esquimault, B. C	29.64	752.8	29.68	753.9	45.3	7.4	100	W	.....	.....	.....	.....	10s	.....	.....	0.05	1.3	Overcast	W. H. Bevis.
*Father Point, Quebec	29.95	760.7	29.97	761.2	41	5.0	91	Calm	0	0	.....	.....	10s	.....	N	0	0	Threatening	J. McWilliams.
Fredericton, N. B	29.73	755.1	29.79	756.7	41.6	5.3	89	NE	10	4.5	.....	.....	10s	.....	NE	0.570	14.48	Overcast	Prof. Harrison.
*Fort Garry Manitoba	28.66	728.0	29 48	748.8	42	5.6	91	E	4	1.8	.....	Haze	Haze	.....	.....	0	0	Hazy	James Stewart.
Granton, Ontario	29.03	737.3	30.16	766.1	39	3.9	.....	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.32	744.7	29.45	748.0	63	17.2	98	NW	7	3.1	.....	.....	10n	.....	.....	2.420	61.47	Light rain	F. Allison, M. A.
Hamilton, Ontario	29.79	756.7	30.17	766.3	44.3	6.8	72	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	30.12	765.0	30.14	765.5	45	7.2	84	S	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.79	756 7	30.13	765.3	45	7.2	81	N	8	1.3	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.54	750.3	29.58	751.3	55.5	13.1	98	SE	22	9.8	.....	.....	10n	.....	.....	0.69	17.5	Raining	C. H. Rigby.
*Montreal, Quebec	29.88	758.9	30.08	764.0	45	7.2	65	W	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.39	746.5	30.10	764.5	40	4.4	99	S	8	1.3	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.35	745.5	30.11	764.8	45.7	7.6	84	Calm	.....	.....	0	0	0	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.46	748.3	30.17	766.3	44	6.7	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S																			Peter Grant.
Port Stanley, Ontario	29.50	749.3	30.17	766.3	37	2.8	90	W	2	0.9	.....	2c	0	W	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.70	754.4	30.03	762.7	41	5.0	91	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.64	752.8	30.12	765.0	34	1.1	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	29.69	754.1	29.74	755.4	42	5.6	89	NE	20	8.9	.....	.....	10	.....	.....	0.60	15.2	Cloudy	Dr. Gove.
St. John, N. B	29.45	748.0	29.62	752.3	43	6.1	91	NE	30	13.4	.....	.....	10n	.....	.....	0.43	10.9	Light rain	G. Murdock, C. E.
*Saugeen, Ontario	29.38	746.2	30.00	764.3	48	8.9	85	S	7	3.1	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stayner, Ontario																			R. J. Cole.
Stratford, Ontario																			C. J. MacGregor, M. A.
*Sydney, C. B	28.84	732.5	30.15	765.8	40.0	4.4	99	NW	3.0	1.3	.....	2cs	0	NW	.....	0	0	Fair	T. C. Hill.
*Toronto, Ontario	29.64	752.8	29.66	753.4	54	12.2	99	E	22	9.8	.....	.....	10n	.....	Calm	0.61	15.5	Light rain	Magnetic Observatory.
Windsor, N. S	29.76	755.9	30.15	765.8	44	6.7	76	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	30.09	764.3	30.26	768.6	46	7.8	77	S	.....	.....	.....	4c	4s	.....	.....	0.01	0.3	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.78	756.4	30.01	762.2	45	7.2	68	NW	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Alpena, Michigan	29.34	745.2	29.98	761.5	51	10.6	72	S	4	1.8	.....	2cs	0	SW	.....	0	0	Clear	
Atlanta, Georgia	29.05	737.9	30.21	767.3	55	12.8	62	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	49	9.4	71	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.07	763.8	30.26	768.6	56	13.3	69	NE	3	1.3	.....	0	Haze	.....	.....	0	0	Clear	
Baltimore, Maryland	30.09	764.3	30.14	765.5	55	12.8	45	NW	7	3.1	.....	0	Sm'e	.....	Calm	0	0	Clear	
Barnegat, New Jersey	30.02	762.5	30.05	763.3	50	10.0	65	NW	16	7.2	.....	0	0	.....	.....	0.07	1.8	Clear	
Bismarck, Dakota	27.87	707.9	29.73	755.1	46	7.8	69	NW	14	6.3	.....	1cs	Sm'e	NW	Calm	0	0	Smoky	
Boerne, Texas	28.57	725.7	.....	.....	71	21.7	90	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Boise City, Idaho	27.06	687.3	30.02	762.5	45	7.2	84	Calm	0	0	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Boston, Massachusetts	29.06	753.4	29.81	757.2	49.5	9.7	68	NW	22	9.8	.....	6c;cs	0	N;NW	.....	3.08	78.2	Fair	
Brackettville, Texas	28.85	732.8	29.85	758.2	70	21.1	80	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.59	726.2	29.57	751.1	40	4.4	82	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	29.96	761.0	30.03	762.7	72	22.2	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.44	747.8	30.14	765.5	52	11.1	86	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Burkes, Arizona	.....	.....	.....	.....	65	18.3	Inap.	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.82	757.4	30.03	764.3	46	7.8	69	N	8	3.6	.....	0	1s	.....	N	Inap.	Inap.	Clear	
Cairo, Illinois	29.65	753.1	30.05	763.3	53	11.7	67	SE	8	3.3	.....	2c	0	W	.....	0	0	Fair	
Camp Apache, Arizona	25.08	637.0	30.03	764.0	42	5.6	57	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.19	639.8	29.99	761.7	56	13.3	35	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.71	678.4	30.20	767.1	45	7 2	65	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.42	696.5	29.99	761.7	33	0.6	100	E	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cape Hatteras, N. Carolina	30.15	765.8	30.16	766.1	58	14.4	70	N	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.11	764.8	30.14	765.5	58	14.4	64	NW	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.18	766.6	30.19	766.8	55	12.8	62	N	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.07	763.8	30.10	764.5	54	12.2	61	N	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.22	742.2	29.92	760.0	66	18.9	95	S	2	0.9	.....	.....	Fog	.....	S	0	0	Foggy	
Charleston, South Carolina	30.20	767.1	30.27	768.8	60	15.6	71	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	34	1.1	61	W	4	1.8	.....	5ck	0	NW	.....	0	0	Fair	
Chicago, Illinois	29.34	745.2	30.04	763.6	51	10.6	72	SW	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
Cincinnati, Ohio	29.55	750.6	30.22	767.6	43	6 1	83	E	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Cleveland, Ohio	29.47	748.5	30.21	767.3	43	6.1	75	SE	8	3.6	.....	5cs	0	Calm	.....	0	0	Fair	
Coleman City, Texas	28.17	715.5	29.81	757.2	61	16.1	82	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.36	745.7	30.23	767.8	42	5.6	83	SE	2	0.9	.....	5cs	Fog	Calm	Calm	0	0	Fair	
Conchо, Texas	28.04	712.2	29.67	753.6	66	18.9	68	S	12	5.4	.....	10k	0	S	.....	0	0	Cloudy	
Corsicana, Texas	29.54	750.3	29.99	761.7	73	22.8	95	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.27	743.4	29.90	759.4	52	11.1	79	S	12	5.4	.....	.....	10s	.....	SW	0.51	13.0	Cloudy	
Decatur, Texas	28.80	731.5	29.93	760.2	67	19.4	89	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.18	741.2	29.96	761.0	64	17.8	89	SE	3	1.3	.....	5k	0	SE	.....	0	0	Fair	
Denver, Colorado	24.71	627.6	29.93	760.2	49	9.4	87	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	28.84	732.5	29.69	754.1	53	11.7	73	SW	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.44	747.8	30.11	764.8	48	8.9	73	SW	4	1.8	.....	1cs	0	Calm	.....	0	0	Clear	
Dodge City, Kansas	27.22	691.4	29.47	748 5	50	10.0	45	W	8	3.6	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Dubuque, Iowa	29.19	741.4	29.88	758.9	52	11.1	79	S	13	5.8	.....	.....	10ks	.....	S	0.02	0.5	Cloudy	
Duluth, Minnesota	28.97	735.8	29.62	752.3	50	10.0	72	SW	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Eagle Pass, Texas	29.25	742.9	29.98	761.5	68	20.0	95	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.56	750.8	29.63	752.6	43	6.1	100	N	31	13.9	.....	.....	10n	.....	NE	0.94	23.9	Light rain	
Edinburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
El Paso, Texas	.....	.....	.....	.....	64	17.8	46	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.45	748.0	30.17	766.3	52	11.1	65	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Escanaba, Michigan	29.22	742.2	29.86	758.4	53	11.7	73	S	14	6.3	.....	8k	0	S	.....	0	0	Cloudy	
Florence, Arizona	28.38	720.8	29.98	761.5	65	18.3	35	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.54	648.7	29.60	751.8	44	6.7	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	66	18.9	23	SW	5	2.2	.....	2k	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.40	746.7	29.92	760.0	63	17.2	67	SE	12	5.4	.....	2k	0	SW	.....	0	0	Clear	
Fort Griffin, Texas	28.65	727.7	29.88	758.9	68	20.0	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.76	705.1	29.60	751.8	71	21.7	53	S	16	7.2	.....	0	5ks	.....	S	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.69	728.7	29.78	756.9	66	18.9	71	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.27	718.0	29.77	756.1	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.00	762.0	30.04	763.0	79	26.1	74	SE	7	3.1	.....	5k	0	SE	.....	0	0	Fair	
Graham, Texas	28.84	732.5	29.85	758.2	71	21.7	66	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.40	746.7	30.05	763.3	50	10.0	65	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.29	744.0	30.07	763.8	50	10.0	58	SE	8	3.6	.....	8cs	0	Calm	.....	0	0	Fair	
Indianola, Texas	30.01	762.2	30.04	763.0	76	24.4	86	S	8	3.6	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.76	730.5	29.82	757.4	70	21.1	70	S	10	4.5	.....	2ck	0	Calm	.....	0	0	Clear	
Jacksonville, Florida	30.15	765.8	30.17	766.3	65	18.3	78	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.23	742.4	29.83	757.7	54	12.2	67	SE	7	3.1	.....	0	5s	.....	SW	0.15	3.8	Fair	
Key West, Florida	30.00	762.0	30.03	762.7	77	25.0	82	E	9	4.0	.....	5c;cs	1ks	W; Calm	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.12	765.0	30.14	765.5	59	15.0	59	N	41	18.3	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.24	742.7	30.27	768.8	46	7.8	84	Calm	0	0	.....	0	Fog	.....	NE	0	0	Clear	
La Crosse, Wisconsin	29.03	737.3	29.74	755.4	55	12.8	74	S	12	5.4	.....	.....	10s	.....	S	0.02	0.5	Cloudy	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	48	3.9	56	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.54	750.3	29.87	758.7	75	23.9	77	SE	4	1.8	.....	5k	0	E	.....	0	0	Fair	
Lead City, Dakota	24.70	627.4	29.97	761.2	36	2.2	71	SW	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
Leavenworth, Kansas	28.94	735.1	29.75	755.6	60	15.6	71	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.61	752.1	29.95	760.7	50	10.0	79	N	6	2.7	.....	0	0s	.....	E	0	0	Cloudy	
Louisville, Kentucky	29.59	751.6	30.16	766.1	45	7.2	84	NE	1	0.4	.....	2c	Fog	Calm	Calm	0	0	Foggy	
Lynchburg, Virginia	29.56	750.8	30 26	768.6	48	8.9	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.88	733.5	29.85	758.2	52	11.1	79	S	12	5.4	.....	.....	10s	.....	W	0	0	Cloudy	
Marquette, Michigan	29.08	738.6	29.76	755.9	55	12.8	62	S	12	5.4	.....	5k	0	SE	.....	0	0	Fair	
Mason, Texas	28.34	719.8	30.04	763.0	69	20.6	84	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.17	740.9	29.80	759.2	63	11.7	61	SW	36	16.1	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Mobile, Alabama	30.11	764.8	30.16	766.1	60	15.6	91	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.96	761.0	30.20	767.1	55	12.8	80	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.19	741.4	30.28	769.1	41	5.0	74	NW	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	23.49	596.6	29.85	758.2	23	— 5.0	100	NW	40	17.9	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.65	753.1	30.00	767.1	43	6.1	83	Calm	0	0	.....	2c	Fog	Calm	Calm	0	0	Fair	
New Haven, Connecticut	29.84	757.9	29.95	760.7	52	11.1	60	NW	14	6.3	.....	0	0	.....	.....	0.01	0.3	Clear	
New London, Connecticut	29.85	758.2	29.90	759.4	53	11.7	61	NW	12	5.4	.....	0	0	.....	.....	2.16	54.9	Clear	
New Orleans, Louisiana	30.05	763.3	30.11	764.8	69	20.6	75	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.79	756.7	29.84	757.9	52	11.1	60	NE	20	8.9	.....	1k	0	N	.....	3.28	83.3	Clear	
New York, New York	29.88	758.9	30.06	763.3	52	11.1	53	NW	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Norfolk, Virginia	30.13	765.3	30.19	766.8	54	12.2	87	N	12	5.4	.....	0	Haze	.....	.....	0	0	Clear	
North Platte, Nebraska	26.92	683.8	29.50	749.3	38	3.3	67	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	29.74	755.4	29.78	756.4	44	6.7	84	S	5	2.2	.....	.....	10n	.....	S	0.27	6.9	Light rain	
Omaha, Nebraska	28.58	725.9	29.62	752.3	55	12.8	87	S	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.84	757.9	30.16	766.1	47	8.3	85	N	1	0.4	.....	0	0	.....	.....	0	0	Clear.	
Pembina, Dakota	28.68	728.5	29.62	749.8	34	1.1	100	W	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Philadelphia, Pa	30.07	763.8	30.12	765.0	51	10.6	59	NW	18	8.0	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.72	729.5	.....	.....	64	17.8	39	E	.....	.....	4	5cs	0	NW	.....	0	0	Fair	
Pike's Peak, Colorado	17.81	452.1	30.02	762.5	21	— 6.1	48	W	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	23.94	608.1	29.71	754.6	48	8.9	49	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.42	747.3	30.25	768.3	40	4.4	91	NW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.43	747.5	30.10	764.5	50	10.0	79	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.70	754.4	29.75	755.6	50	10.0	58	N	24	10.7	.....	5k	0	Calm	.....	0.75	19.1	Fair	
Portland, Oregon	29.83	757.7	29.93	760.2	44	6.7	84	SE	6	2.7	.....	.....	10ks	.....	S	0.14	3.6	Cloudy	
Prescott, Arizona	24.76	628.6	30.11	764.8	40	4.4	48	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
Pilot Point, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Punta Rassa, Florida	30.07	763.8	30.08	764.0	73	22.8	81	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.68	753.9	30.05	763.3	50	10.0	58	Calm	0	0	.....	0	0	.....	.....	0.18	4.6	Clear	
Rio Grande City, Texas	29.82	757.4	30.04	763.0	71	21.7	85	E	.....	.....	1	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.52	749.8	30.14	765.5	44	6.7	76	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.42	747.3	29.99	761.7	43.6	6.4	83	S	6	2.7	.....	.....	10s	.....	Calm	0.30	7.6	Cloudy	
Sacramento, California	29.94	760.5	30.02	762.5	48.6	9.2	89	SW	4	1.8	.....	1c	0	W	.....	0	0	Clear.	
St. Louis, Missouri	29.42	747.3	29.99	761.7	53	11.7	73	S	12	5.4	.....	0	5s	.....	.....	0	0	Fair	
St. Marks, Florida	30.16	766.1	30.18	766.6	62	16.7	94	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.78	731.0	29.58	751.3	51	10.6	64	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.44	646.2	29.77	756.1	66.0	18.8	46	W	11	4.9	.....	.....	10s	.....	SW	0.02	0.5	Cloudy	
San Antonio, Texas	29.32	744.7	29.80	759.2	74	23.3	81	Calm	0	0	.....	Haze	0	SE	.....	0	0	Hazy	
San Diego, California	29.93	760.2	30.00	762.0	61	16.1	77	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.49	749.0	30.17	766.3	50	10.0	72	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.00	762.0	30.04	763.0	55	12.8	56	NW	26	11.6	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.01	762.2	30.07	763.8	53	11.7	67	SW	8	3.6	.....	5c	0	W	.....	0	0	Fair	
Santa Fé, New Mexico	28.28	691.3	29.82	757.4	39	3.9	46	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.13	765.8	30.22	767.6	60	15.6	82	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.83	757.7	30.05	763.3	59	15.0	76	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.30	617.2	.....	.....	48	8.9	42	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.23	767.8	30.26	768.6	54	12.2	93	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.80	756.9	29.93	760.2	53	11.7	48	N	12	5.4	.....	0	0	.....	.....	0.01	0.3	Clear	
Stockton, Texas	26.94	684.3	29.94	760.5	52	11.1	53	S	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.72	754.9	29.77	756.1	52	11.1	60	N	36	16.1	.....	2ck	2s	NW	NW	4.21	106.9	Clearing	
Toledo, Ohio,	29.44	747.8	30.12	765.0	49	9.4	64	SE	8	3.6	.....	5c	0	NW	.....	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	64	17.8	45	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.18	766.6	30.22	767.6	70	21.1	57	E	13	5.8	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Umatilla, Oregon	29.58	751.3	.....	.....	37	2.8	81	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	44	6.7	92	S	.....	.....	1	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.10	739.1	29.90	759.4	70	21.1	90	E	2	0.9	.....	0	5s	.....	S	0	0	Fair	
Vicksburg, Mississippi	29.89	759.2	30.15	765.8	56	13.3	63	SE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.04	610.6	29.52	749.8	33	0.6	79	SE	1	0.4	.....	.....	10s	.....	Calm	0.25	6.3	Cloudy	
Visalia, California	29.66	753.4	30.03	762.7	52	11.1	93	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Washington, D. C.	30.07	763.8	30.19	766.8	52	11.1	66	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear.	
Wickenburg, Arizona	.....	.....	.....	.....	50	10.0	65	N	.....	.....	1	8c	0	N	.....	0	0	Fair	
Wilmington, N. Carolina	30.16	766.1	30.24	768.1	53	11.7	70	N	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	46	7.8	54	W	12	5.4	.....	10k	0	W	.....	0	0	Cloudy.	
Wood's Holl, Mass.	29.70	754.4	29.75	755.6	51	10.6	65	NW	24	10.7	.....	.....	8s	.....	NW	2.70	68.6	Cloudy	
Yankton, Dakota	28.39	721.1	29.63	752.6	54	12.2	48	W	10	4.5	.....	2c	0	W	.....	0	0	Fair	
Yuma, Arizona	29.68	753.9	29.84	757.9	63	17.2	78	NW	2	0.9	.....	8cs	0	SW	.....	0	0	Fair	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.90	759.4	29.93	760.7	22.0	— 5.6	93	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	29.97	761.2	29.99	761.7	80	26.7	78	SE	1.2	0.5	.....	10c?	4ks	Calm	NE	0.30	7.6	Cloudy	Chas. Hassenbrauk.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	86	30.0	79	Calm	0	0	.....	2c	2ks	NE	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.09	764.8	30.10	764.5	81	27.2	87	Calm	0	0	.....	5c	0	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	83	28.3	.....	NE	11.7	5.2	.....	.....	.....	.....	.....	0.32	8.1	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	85	29.4	74	E	.....	.....	2	4c	5k	E	.....	0	0	Fair	C. J. Hemmer.
Medellin, Colombia, S. A.	25.23	640.8	.....	.....	66.6	19.2	86	Calm	0	0	.....	.....	8s;ks	.....	.....	0.09	2.3	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.76	755.9	30.07	763.8	84	28.9	91	SE	.....	.....	.....	c	.....	.....	.....	.....	.....	.....	Robert Elworthy.

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,383 (?) ft.. or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,922 (?) ft., or 1,498.8 (?) m.; Fort Davis, 5,208 (?) ft., or 1,586.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.86 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.20	767.1	69	20.6	69	20.6	80	NE	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	29.78‡	756.4‡	.....	.....	50	10.0	64	N	10	4.5	.....	.....	10	.....	.....	2.	51.	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan	30.24*	768.1*	60.5	15.8	50.2	10.1	86	NW	.....	.....	1	.....	2c	.....	NW	0	0	.....	.....	Fair.....	
Adams. S. 36° 12′, W. 76° 12′	30.06	763.5	63	17.2	58	14.4	94	W	.....	.....	4	.....	5	.....	W	.....	.....	Mod'ate	NW	Fair.....	
Alaska. S 20° 51′ W. 75° 12′	30.14	765.5	65	18.3	59	15.0	82	SSE	.....	.....	2	.....	10	.....	SE	0	0	Smooth	.....	D. clouds	
Alliance, Smyrna, Turkey	30.14‡	765.5‡	.....	.....	71	21.7	62	W	.....	.....	2-3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ashuelot. Nagasaki, Japan	30.29	769.4	71	21.7	67	19.4	64	NE	.....	.....	2	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.	30.08	764.0	56	13.3	70	21.1	90	NE	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Cloudy?.....	
Colorado. New York, N. Y.	30.04‡	763.0‡	.....	.....	53	11.7	54	NW	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Hazy.....	
Constitution, Havre, France	.....	.....	.....	.....	56	13.3	94	E	.....	.....	2	.....	1	.....	Calm	.....	.....	.....	.....	Clear.....	
Despatch, Constantinople, Turkey	30.22‡	767.6‡	.....	.....	72	22.2	54	NE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, S. 37° 32′, W. 0° 15′	30.05	763.3	58	14.4	55	12.8	100	SW	.....	.....	4	.....	5	.....	SW	.....	.....	Mod'ate	SW	Fair	
Franklin, Norfolk, Va.	30.25	768.8	68	20.0	67	13.9	75	NNW	12	5.4	.....	.....	1	.....	N	0	0.	.....	.....	Clear.....	
Gettysburg Port Said, Egypt	29.97‡	761.2‡	.....	.....	80	26.7	100	ENE	.....	.....	2	.....	3	.....	Calm	1.	25.	Light	SW	Clear.....	
Guard. S. 3° 44′, W. 34° 57′	30.02	762.5	80	26.7	80	26.7	82	ENE	.....	.....	4	.....	5	.....	ENE	.....	.....	Mod'ate	E	Fair.....	
Hartford, Santos, Brazil	30.12	765.0	.....	.....	65	18.3	49	S	4.8	2.1	.....	.....	10	.....	.....	0	0	Smooth	.....	Cloudy.....	
Marion, Trieste, Austria	30.04	763.0	65	18.3	64	17.8	73	ENE	.....	.....	4	.....	10	.....	ENE	Light	Light	.....	.....	Light rain..	
Michigan, Erie, Pa.	30.06†	763.5†	.....	.....	50	10.0	55	S	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy. Yokohama, Japan	30.32‡	770.1‡	.....	.....	53	11.7	86	W	.....	.....	0-1	.....	2	.....	W	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.	30.38	771.6	71	21.7	70	21.1	70	NNE	17	7.6	.....	.....	.....	.....	NNE	0	0	.....	.....	Clear.....	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	61	16.1	83	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.29	769.4	58	14.4	54	12.2	74	SW	.....	.....	2	.....	2	.....	N;E	.....	.....	.....	.....	Fair	
Passaic, Washington, D. C.	.....	.....	.....	.....	52	11.1	100	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. N. 30° 34′, W. 62° 53′	30.07	763.8	81	27.2	81	27.2	83	S	.....	.....	3	.....	8	.....	S	.....	.....	Mod'ate	S	Misty.....	
Powhatan, Portsmouth, N. H.	29.79‡	756.7‡	.....	.....	52	11.1	60	NW	24	10.7	.....	.....	2	.....	.....	2.	51.	.....	.....	Clear.....	
Ranger. Hong-Kong, China	30.23	767.8	81	27.2	82	27.8	83	NE	.....	.....	1	.....	5	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas	29.98	761.5	73	22.8	73	22.8	95	E	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md	30.08‡	764.0‡	.....	.....	54	12.2	55	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga. Philadelphia, Pa.	30.00	762.0	.....	.....	52	11.1	66	NNW	.....	.....	1	.....	1	.....	.....	0	0	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.05	763.3	55	12.8	55	12.8	68	NNW	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France	30.37	771.4	56	13.3	58	14.4	76	SE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear.	
Swatara, Boston, Mass.	29.81‡	757.2‡	.....	.....	55	12.8	87	N	.....	.....	6	.....	2	.....	NW	.....	.....	.....	.....	Fair.....	
Trenton. N. 38° 32′, W. 2° 58′	30.10‡	764.5‡	.....	.....	76	24.4	68	E	.....	.....	4	.....	2	.....	E	0	0	Smooth	.....	Clear.....	
Tuscarora. N. 30° 27′, W. 121° 00′	29.80	756.9	59	15.0	58	14.4	90	NW	.....	.....	3	.....	0	.....	.....	0	0	Mod'ate	NW	Clear.....	
Vandalia, Gibraltar	30.09‡	764.3‡	.....	.....	70	21.1	85	ENE	.....	.....	3	.....	2	.....	ENE	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.	.....	.....	.....	.....	50	10.0	72	NNW	.....	.....	9	.....	2	.....	.....	1.91	48.5	.....	.....	Clear	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Upper	Lower	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking, N. 35° 27', E. 177° 36'		30.11*	764.8*	70	21.1	95	S			4		2		S		Small	S	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 11° 13', W. 87° 16'		29.99*	761.7*	78	25.6	??	NNW			3		9		NW		Small	NW	Showery	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 39° 05', W. 123° 55'		30.08*	764.0*	54	12.2	80	Calm			0		0			0	Small	W	Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 40° 28', W. 68° 09'		29.69*	754.1*	53	11.7	??	NW			6				W	0	Mod'ate	NE	Showery	Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 27° 28', E. 122° 53'		30.02	762.5	74	23.3	90	NE			4		10		NW		2	NE	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana. N. 39° 40′ W. 74° 42′		30.04*	763.0*	59	15.0	94	NNW			3		2		NNW	Heavy	Smooth		Clear	Captain Sargent.
S. S. Ohio. N. 51° 27′, W. 13° 03′		29.80	756.9	69	20.6	90	S			6		10		SSE	Light	Mod'ate	SSE	Hazy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller																			Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 14, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador																			Dr. Ollive.
Nemours			29.93	760.2	74.1	23.4	77	NW			1		1			0	0	Very fair	Kesxuche.
Algiers			29.87	758.7	75.2	24.0	66	NNE			3		1			0	0	Very fair	Tourillere.
La Calle			29.93	760.3	71.6	22.0	66	ENE			5		4			0.012	0.3	Cloudy	Foufrede.
Tunis			30.02	762.5	73.4	23.0	58	E			5		0			0	0	Clear	Jacques.
Sfax			30.06	763.5	77.0	25.0		NNE			5		10			0	0	Covered	Gau.
Saida			29.93	760.3	86.0	30.0	18	W			3		3			0	0	Pretty fair	Herbin.
Tebessa			29.90	760.9	72.5	22.5	52	SSW			6		3			0	0	Pretty fair	Watrin.
Geriville			29.95	760.8	73.4	23.0	32	S			3		2			0	0	Fair	Brugnlaux.
Laghouat			30.05	763.3	77.7	25.4	56	NE			5		0			0	0	Clear	Bertrand.
Biskra			30.02	762.6	82.8	28.2	43	NW			1		3			0	0	Pretty fair	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.45	748.1	30.00	762.0	55.4	13.0	97	NE			4		10			1.654	42.0	Raining	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.54	750.3	30.32	770.1	52.5	11.4	91	E			2		10			0.110	2.8		Dr. Wierzbiski
Eperies	29.34	745.3	30.22	767.5	58.3	14.6	76	Calm			0		7c;s			0	0		Julius Mikolik.
Gratz	28.80	731.6	30.06	763.4	53.8	12.1	91	ENE			4		10			0.429	10.90		Andreas Rospini.
Hermannstadt	28.70	729.0	30.17	766.3	62.8	17.1	45	SSE			2		3			0	0		Prof. A. Gottschling.
Kremsmünster	28.69	728.7	30.05	763.2	47.7	8.7	93	ENE			6		10			0.386	9.8		Prof. C. Wagner.
Lemberg	29.23	742.4	30.22	767.6	53.8	12.1	91	NE			1		10			0	0		Dr. T. Stanecki.
Pola	29.72	754.9	29.83	757.7	61.2	16.2	100	ENE			2		10s			1.969	50.0		I.R.Hydrographic Office.
Szathmar	29.73	755.1	30.19	766.8	67.1	19.5	52	E			3		3			0	0		Julius Csics, S. J.
Szegedin	29.78	756.5	30.06	763.4	70.2	21.2	61	S			3		5			0	0		Karl Stancel.
Trieste	29.80	756.8	29.90	759.4	67.0	13.9	97	ENE			4		10			2.264	57.5	Raining	P. Busin.
Vienna	29.43	747.4	30.15	765.7	52.3	11.3	99	NE			3		10			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.59	726.2	30.10	764.6	52.9	11.6	59	E			6		6			0	0		Prof. M. Passau.
Brussels	29.95	760.8	30.15	765.9	55.2	12.9	61	ENE			5		0			0	0		Royal Observatory
Furnes																			M. E. de Cae.
Maeseyck	30.09	764.2	30.22	767.5	55.6	13.1	66	E			2		0			0	0		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.96	761.0	30.06	763.5	53.4	11.9	.....	SSE	16	7.2	.....	.....	7	.....	.....	0	0	D. clouds.....	W. Boswell.
Ardrossan	29.94	760.5	29.96	761.0	57	13.9	.....	SSE	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds..	George Carrick.
Armagh, Observatory	.....	.....	29.88	758.9	55.3	12.9	.....	SSE	27	12.1	.....	.....	10	.....	.....	.....	.....	Squally	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	30.05	763.3	57.1	13.9	.....	SE	19	8.5	.....	.....	8	.....	.....	.....	.....	Overcast	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.72	754.9	30.11	764.8	57.2	14.0	.....	SE	.....	.....	2	.....	2	.....	.....	0	0	D. clouds....	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83	28.3	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A. H.Todd. [H.C.
Cambridge, Observatory	.....	.....	30.17	766.3	63.0	17.2	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	
Cardington	.....	.....	30.14	765.5	59.0	15.0	.....	SE	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	30.04	763.0	30.16	766.1	60.2	15.7	.....	E	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	Lt. G. W. Morris, R. E.
Dartmoor	28.48	723.4	29.95	760.7	53.4	11.9	.....	E	.....	.....	6	.....	3	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	29.92	760.0	29.95	760.7	56	13.3	.....	S	.....	.....	6	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	30.11	764.8	30.14	765.5	56	13.3	.....	ESE	.....	.....	4	.....	1	.....	.....	.....	.....	¼ clouded...	J. Costello.
Falmouth, Observatory	.....	.....	.....	.....	.....	.....	.....	SE	.....	.....	6	.....	3	.....	.....	.....	.....	D. clouds....	The Staff.
Fort Napier, (Natal)	27.56	700.0	29.88	758.9	78.2	25.7	.....	NE	.....	.....	3	.....	2	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.73	755.1	29.96	761.0	78	25.6	.....	NE	.....	.....	0	.....	4	.....	.....	.....	.....	Drizzling.....	
Galway, Queen's College	.....	.....	29.69	754.1	58	14.4	.....	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	Overcast.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.82	757.4	29.88	758.9	.....	.....	.....	E	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.79	756.7	29.99	761.7	55.2	12.9	.....	SSE	.....	.....	5	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	30.21	767.3	30.22	767.6	57	13.9	.....	SE	.....	.....	4	.....	2	.....	.....	.....	.....	Blue sky.....	G. T. Watson.
Greenwich, Royal Obs'y	29.97	761.2	30.14	765.5	60.9	16.1	.....	SE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky.....	The Staff, for G. B. Airy.
Guernsey	29.76	755.9	29.98	761.5	57.5	14.2	.....	ESE	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	Dr. S. E. Hoskins, F.R.S.
Heiston	.....	.....	29.98	761.5	60	15.6	.....	SE	.....	.....	6	.....	3cs	.....	.....	0	0	Fine.....	M. P. Moyle.
Holyhead	29.92	760.0	29.97	761.2	60	15.6	.....	SSE	.....	.....	3	.....	5	.....	.....	.....	.....	Blue sky.....	John Tilston.
Jersey	29.75	755.6	30.04	763 0	57.0	13.9	.....	E	.....	.....	3	.....	0	.....	.....	.....	.....	Blue sky.....	J. Fisher.
Kew, Observatory	30.10	764.5	30.14	765.5	59.9	15.5	.....	ESE	21	9.4	.....	.....	1	.....	.....	.....	.....	Blue sky.....	The Staff.
Kingstown	29.91	759.7	29.94	760.5	57	13.9	.....	SE	.....	.....	6	.....	9	.....	.....	.....	.....	Overcast.....	George Mitchell.
Leicester, Museum	.....	.....	30.14	765.5	60.1	15.6	.....	SW	.....	.....	1	.....	.....	.....	.....	.....	.....	Blue sky.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.99	761.7	74	23.3	.....	SE	.....	.....	6	.....	8cs	.....	.....	1.4	36.	Overcast.....	Sergt. Beckett.
Nairn	29.81	757.2	29.90	759.4	57	13.9	.....	SW	.....	.....	5	.....	5	.....	.....	.....	.....	½ clouded...	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.06	763.5	78.0	25.6	.....	NE	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	30.00	762.0	30.19	766.8	61.1	16.2	.....	SE	.....	.....	3	.....	1c	.....	SSW	0.010*	0.5*	Blue sky.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.59	751.6	30.11	764.8	58.7	14.8	.....	SE	.....	.....	4	.....	8	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.11	764.8	59	15.0	.....	E	.....	.....	3	.....	1	.....	.....	.....	.....	Blue sky.....	H.E. Bellamy.
Plymouth	29.92	760.0	29.99	761.7	58.4	14.7	.....	E	.....	.....	5	.....	3	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	29.77	756.1	29.81	757.2	57	13.9	.....	SSE	.....	.....	6	.....	10	.....	.....	.....	.....	Gale.....	W. Kennedy.
Saint Ann's Head	29.77	756.1	29.93	760.2	58	14.4	.....	SE,	.....	.....	6	.....	2	.....	.....	.....	.....	Blue sky.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.90	759.4	54	12.2	.....	S	32	14.3	.....	.....	4	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.18	766.6	73.6	23.1	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.86	758.4	30.14	765.5	57.7	14.3	.....	S	.....	.....	4	.....	1	.....	.....	0	0	Blue sky.....	W. F. Cooper.
Silloth, Rectory	29.95	760.7	29.98	761.5	58.8	14.9	74	W	.....	.....	2	.....	6	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	29.70	754.4	30.11	764.8	57.0	13.9	.....	SE	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds....	Rev. S. J. Perry.
Stornoway, Lews Co., Hebr.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Strathfield Turgiss	29.92	760.0	30.14	765.5	59.3	15.2	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	29.85	758.2	29.91	759.7	55	12.8	.....	S	.....	.....	4	.....	10	.....	.....	.....	.....	Gloomy.....	John Trotter.
Truro, Royal Institution	.....	.....	29.94	760.5	61	16.1	.....	SE	.....	.....	8	.....	4	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	29.63	752.6	29.65	753.1	59.1	15.1	.....	SE	40	17.9	.....	.....	10	.....	.....	.....	.....	D. clouds....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	28.94	735.1	49.0	9.4	64	NW	.....	.....	2	.....	9km	.....	.....	0.19	4.8	Raining.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.95	760.7	30.14	765.6	76.8	24.9	68	WSW	10.0	4.5	.....	0	8	.....	WSW	.....	.....	Cloudy.....	C. Meldrum.
Melbourne, Observatory	29.38	746.2	29.47	748.5	52.0	11.1	86	WNW	18	8.0	.....	.....	10	.....	.....	0	0	Squally.....	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m. *Dew

MARINE SERIES. VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 42° 10', W. 56° 45'	.....	.....	29.57	751.1	67	19 4	.....	SW	.....	.....	8	.....	6	.....	.....	6	Con-fused.	D. clouds.....	Capt. Alex. Wilson.
Barque Commewyne, N. 11° 35', W. 52° 55'	.....	.....	29.99	761.7	85	29.4	.....	W	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds.....	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 20° 35', W. 66° 5'	.....	.....	29.95	760.7	87	30.6	.....	.....	.....	.....	1	.....	3	NW	.....	7	ENE	Raining.....	Capt. D. W. A. Qualle
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Punta Arenas																			
San José	26.27	667.2	29.99	761.7	67.6	19 8	91	Calm			0	9ck				Inap.	Inap.		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen																			
Farôe	30.35	771.0	30.40	772.2	49.5	9.7	99	Calm			0		10						Foggy
Godthaab, (Greenland)	30.34	770.7	30.36	771.2	57.0	13.9	78	SE			2		1						
Stykkisholm, (Iceland)																			
Thorshavn, (Farôe)																			
Vestervig	29.65	753.1	29.69	754.0	52.2	11.2	94	S			2		10						
	30.17	766.4	30.34	770.7	58.3	14.6	83	Calm			0		0						Foggy

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.63	750.0	30.08	764.0	52.9	11.6	89	NE			1		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.00	762.1	30.11	764.9	57.2	14.0	71	E			2		0			0	0	Clear	Bonvallet, Director.
Avignon, Normal School	29.80	756.9	29.88	758.9	62.6	17	56	NE			1		0			0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.43	747.5	29.99	761.7	55.6	13.1	55	E			4		5n		E	0	0	Cloudy	C. Saillard.
Beauvais, Normal School	29.79	756.7	30.08	764.0	56.7	13.7	55	E			3		0			0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.09	738.9	29.99	761.8	50.9	10.5	73	NE			6		10		N	0	0	Covered	Normal School.
Bourg-en-Bresse, N. School	28.71	729.3	29.86	758.4	46.9	8.3	97	SE			1		5n		SE	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.39	746.5	29.95	760.7	54.3	12.4	93	NE			4		5k		NE	0	0	Cloudy	A. Wagner, Director.
Brest, Naval Observatory	29.63	752.6	29.87	758.8	62.6	17.0	52	SE			2	1c		SE		0	0		The Staff.
Carcassonne, Normal School	29.43	747.6	29.84	757.9	66.9	19.4	38	W			1		0			0	0	Clear	Septembre, Director.
Caen	29.95	760.7	30.02	762.5	60.1	15.6	62	SE			4		0			0	0	Very clear	M. Lair, Director.
Chartres, Normal School	29.36	745.7	29.92	759.9	57.0	13.9	86	E			4		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.72	754.9	30.04	763.0	59.0	15.0	74	E			4		0			0	0	Clear	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.67	725.7	29.94	760.4	45.0	9.8	76	NE			1		5			0	0	Cloudy	Allnard, Director.
Commercy, Normal School	29.18	741.2	30.00	763.5	52.9	11.6	65	ENE			6		ck		ENE	0	0		Dr. Coulet, Director
Commune de Grèasque*	28.76	730.4	29.90	759.4	64.6	18.1	43	SE			2		5	SE		0	0	½ covered	M. Kina.
Grenoble, Normal School	29.08	738.6	29.84	758.0	54.0	12.2	76	WNW			1		k		N	0	0	Cloudy	M. Ablard, Director.
La Rochesur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.71	754.5	30.01	762.3	55.9	13.3	65	ESE			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.00	736.5	29.91	759.8	52.2	11.2	75	NE			1		8		W	0	0	Misty	Baudry, Director.
Lorient, Naval Observatory	29.85	758.2	29.95	760.7	59.4	15.2	60	SE			3				SE	0	0		T. Carré, Director.
Mâcon, Normal School	30.20	767.0	30.23	767.8	48.6	9.2	81	NE			1		10			0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.96	735.5	30.00	762.0	50.4	10.2	90	NW			4		10n		SSE	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.68	753.8	29.88	759.0	62.6	17	70	N			1		5		N	0	0	Cloudy	Boyer, Director.
Privas, Normal School	28.91	734.3	29.98	761.4	55.4	13	77	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.01	635.3			36.5	2.5	98	NE			1		Fog			0	0	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	29.91	759.8	29.95	760.6	59.2	15.1	65	E			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.98	761.4	30.07	763.6	60.3	15.7	55	ESE			2		0			0	0	Clear	F. Lucard, Director.
Saint Malo (Port)			29.97	761.1	61.5	16.4	53	SE			1		0			0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.86	758.5	30.03	762.7	59.0	15.0	49	ENE			2-3		1		ESE	0	0		E. Renou.
Tarbes, Normal School	28.93	734.9	29.99	761.8	64.4	18	80	SSW			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.21	742.0	29.94	760.5	51.6	10.9	82	N			1		5		NW	0	0	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.39	10.		L'Abbé Marchési.
Lyons, Observatory			29.93	759.5									5			0	0		
Marseilles, Observatory			29.87	758.6	64.2	17.9	61	W			0-1		5			0	0		The Staff.
Mont-Louis	24.76	628.9	30.08	763.9	53.6	12.0	20	SW			2		1		SE	0	0		M. Cave.
Nice			29 88	758.9	65.1	18.4	78	W			1		10			0.308	7.7	Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.74	755.5	30.02	762.5	57.9	14.4	59	ENE			4		0			0	0		Marié Davy, Director
Perpignan			29.87	758.8	63.3	17 4	44	SE	9.3	4.17			0			0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.45	570.2			51.8	11.0		SW			3		0			0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.18	741.1	29.90	759.5	58.8	14.9	43	E			1		0			0	0		The Staff.
Tours																			C. Marquet.
Versailles			30.03	762.8	58.6	14.8	89	E			3		0			0	0	Very fine	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.5	30.20	767.1	57.4	14.1	99	WNW	1.6	0.7		5c		W		Inap.	Inap.	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0.50, instead of 0.55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.8	30.09	764.3	52.9	11.6	61	NE			6		8	NE		0.04	1.	Raining	Prof. Dr. Hoh.
Berlin	30.17	766.4	30.35	770.8	57.4	14.1	62	SE			2		4			0	0		Prof. Arndt.
Breslau	29.80	757.0	30.34	770.6	56.8	13.8	51	ENE			2		6			0	0		Royal University Obs'y
Carlsruhe	29.59	751.6	30.02	762.5	49.1	9.5	88	NE			3		10			0.028	0.7	Light rain	Albert Senz.
Cassel	29.63	752.7	30.24	768.2	55.8	13.2	52	E			4		2	E		0	0		Dr. H. Möhl.
Crefeld	30.04	762.9	30.20	767.0	58.3	14.6	51	NE			4		0			0	0		Director Lose.
Emden	30.36	771.2	30.40	772.1	56.7	13.7	72	ENE			1		0			0	0		Prof. Prestel.
Frankfort on the Main	29.77	756.1	30.13	765.4	55.9	13.3		NE			4		10			0	0		Physical Society.
Friedrichshafen	28.49	723.6	29.93	760.2	51.1	10.6	78	NE			7		8	NE		0	0		M. Wilhelm.
Hamburg	30.30	769.5	30.37	771.3	55.8	13.2	72	ENE			4		3k	NE		0.008	0.2	Clear	Captain F. Hegemann.
Kiel	30.35	771.0	30.37	771.5	55.9	13.3	82	NE			1		5			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.32	770.0	30.40	772.1	57.2	14.0	86	SE			3		6			0.004	0.1		Prof. E. Luther.
Köslin			30.35	771.0	56.8	13.8		N			2		0			0	0		H. Müller.
Leipsic, Observatory	29.87	758.7	30.30	769.5	55.0	12.8	59	NE			4		4	ENE		0	0		Prof. Bruhns.
Memel, Naval School	30.35	771.0	30.40	772.2	53.8	12.1	94	S			1		10					Foggy	Reinbrecht and Skalweit.
Neufahrwasser	30.40	772.1	30.41	772.5	57.6	14.2	77	NE			3		5			0	0		A. Lothes.
Posen	30.10	764.6	30.40	772.1	55.6	13.1	61	N			4		3			0	0		Dr. Magener.
Strassburg (in Alsace)	29.48	748.7	30.04	762.9	50.0	10.0	81	NNE			5		10	E				Raining	Astronomical Observatory.
Stuttgart	29.06	738.0	30.01	762.2	48.2	9.0	87	N			1		10			0.094	2.4	Light rain	Prof. Schoder.
Treves, (Trier)	29.54	750.3	30.07	763.6	56.8	13.8	54	E			7		6			0	0		Prof. Flesch.
Weissenburg, (Bavaria)	28.52	724.4	30.02	762.5	48.6	9.2	87	E	9.8	4.4			10		ENE	0.295	7.5		Dr. Von Bebber.
Wustrow, Naval School	30.37	771.5	30.40	772.1	56.6	13.6	71	ENE			3		2ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.83	757.6	30.21	767.2	74.5	23.6		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.42	747.3	29.89	759.2	91.0	32.8	40	NW					5	SSW		0	0	D. clouds	
Bombay	29.78	756.4	29.82	757.3	84.3	29.1	75	NNW	14	6.3			6	NNW		0	0	D. clouds	
Poona	27.84	707.0	29.82	757.3	83.9	28.8	45	N					10		N	0	0	D; clouds	
Lahore	29.08	738.6	29.81	757.1	90.1	32.3	37	Calm	1.2	0.5						0	0	Blue sky	
Belgaum	27.30	693.5	29.83	757.6	79.2	26.2	61	N	4	1.8			10	E		0	0	Overcast	
Roorkee	28.94	735.0	29.83	757.8	81.8	27.7	63	Calm	2	0.9						0	0		
Agra	29.29	744.0	29.85	758.1	89.7	32.1	44	N								0	0		
Nagpur	28.73	729.8	29.77	756.1	83.1	28.4	52	Calm	3.9	1.7			9	NE		0	0	D. clonds	
Lucknow	29.43	747.6	29.80	756.9	84.3	29.1	57	Calm	0.6	0.3						0	0	Blue sky	
Allahabad	29.50	749.4	29.81	757.3	82.2	27.9	61	Calm	1.4	0.6			2			0	0	D. clouds	
Patna	29.64	752.8	29.82	757.4	84.0	28.9	77	Calm	0.4	0.2			4	W	W	0	0	Lightning	
Hazaribagh	27.80	706.0	29.80	757.0	79.6	26.4	75	ENE	5.9	2.6			10		E	0	0		
Cuttack	29.69	754.2	29.78	756.3	80.0	26.7	82	NE	4.5	2.0			6			0.43	10.9	D. clouds	
Calcutta (Alipore)	29.80	756.8	29.82	757.4	79.7	26.5	89	SE	5.0	2.2			4			0	0	D. clouds	
Goalpara	29.43	747.6	29.82	757.4	83.8	28.8	71	Calm	8.8	3.9			0			0	0	Blue sky	
Chittagong	29.79	756.8	29.89	759.1	78.9	26.1	91	S	2.7	1.2			10					Raining	
Sibsagar	29.49	749.1	29.83	757.6	83.2	28.4	84	ENE	1.4	0.6			6	SSE	SSE	0	0	D. clouds	
Jubbulpore	28.46	722.9	29.82	757.4	82.1	27.8	52	NE	1.6	0.7			10			0	0	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.9 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.54	750.3	29.95	760.7	57.2	14.0	85	NE	1.8	0.8	.....	.....	10	.....	.....	1.969	50.0	.....	Prof. Giovanni Clodig.
Padua	29.78	756.3	29.89	759.1	59.0	15.0	78	ENE	16.8	7.5	.....	.....	10	.....	.....	0.866	22.0	.....	Prof. Dott. Lorenzoni
Vicenza	29.71	754.7	29.90	759.5	57.6	14.2	90	NE	2.5	1.1	.....	.....	10	E	.....	1.185	30.1	.....	Cont. Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.37	746.1	29.89	759.1	55.9	13.3	88	W	.....	.....	2	.....	10	E	.....	0.504	12.8	.....	Prof. Schiaparelli.
Moncalieri	29.02	737.2	29.93	760.1	56.7	13.7	82	SSE	1.3	0.6	.....	.....	9	NW	.....	0.389	8.6	.....	Prof. P. F. Denza.
Mondovi	28.00	711.2	29.90	759.5	51.3	10.7	91	W	.....	.....	4	.....	9	.....	.....	1.717	43.6	.....	Prof. D. C. Bruno.
Porto Maurizio	29.64	752.9	29.86	758.5	68.0	20.0	52	SSE	.....	.....	2	.....	7	N	.....	0.165	4.2	.....	Prof. L. Vassallo.
Genoa	29.70	754.4	29.87	758.6	59.9	15.5	86	NE	1.3	0.6	.....	.....	10	SE	.....	0.732	18.6	.....	Prof. G. M. Garibaldi.
Parma	29.61	752.0	29.96	760.9	55.9	13.3	95	NNE	.....	.....	4	.....	10	.....	.....	0.260	6.6	.....	Prof. P. Pigorini.
Florence	29.58	751.4	29.84	757.9	68.0	20.0	72	WNW	.....	.....	2	.....	9	SE	.....	0.067	1.7	.....	Cav. F. Meucci
Leghorn	29.72	754.8	29.80	756.9	63.1	17.3	83	SW	7.4	3.3	.....	.....	10	SW	.....	0.677	17.2	.....	Prof. P. Monte.
Pesaro	29.79	756.7	29.84	757.9	64.2	17.9	79	NW	4.3	1.9	.....	.....	9	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.37	720.6	29.91	759.8	56.5	13.6	75	NNE	.....	.....	1	.....	10	.....	.....	0.976	24.8	.....	Prof. P. Serpieri
Rome	29.72	755.0	29.90	759.4	69.1	20.6	52	S	9.8	4.4	.....	.....	8	.....	.....	0.118	3.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.77	756.2	29.97	761.2	71.6	22.0	61	SW	.....	.....	6	.....	8	SW	.....	1.303	33.1	.....	Prof. L. Palmieri.
Lecce	29.78	756.5	30.04	762.9	72.5	22.5	62	SE	31.1	13.9	.....	.....	7	S	.....	0.031	0.8	.....	Prof. C. De Giorgi.
Cagliari	29.75	755.7	29.94	760.5	67.8	19.9	66	S	.....	.....	2	.....	10	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.13	739.8	30.00	761.9	73.0	22.8	74	SE	6.3	2.8	.....	.....	9	.....	.....	0.173	4.4	.....	Prof. F. D. Conti.
Palermo	29.74	755.5	29.99	761.8	71.6	22.0	72	WSW	1.8	0.8	.....	.....	9	.....	.....	0.402	10.2	.....	Prof. G. Cacciatore.
Syracuse	30.01	762.2	30.08	764.1	70.3	21.3	79	S	4.9	2.2	.....	.....	10	SW	.....	1.035	26.3	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.78	756.4	29.98	761.5	62.1	16.7	96	NE	3.8	1.7	.....	.....	10n	.....	.....	.....	.....	Rainy	
Tokei (Yeddo) Observatory	30.11	764.8	30.16	766.6	53.0	11.7	99	NNW	7.7	3.4	.....	.....	10n	.....	.....	3.400	86.36	Raining	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.5	17.5	70	NW	.....	.....	3	2cs	0	.....	.....	0	0	Clear.	P. Ceballos.
Guadalajara	25.08	637.0	30.06	763.6	55.0	12.8	68	Calm	.....	.....	0	.....	1	.....	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.44	620.8	30.00	762.0	59.6	15.3	82	NW	.....	.....	1	1c	2k	E	E	0	0	Clear.....	Prof. M. Leal.
Mexico	23.14	587.6	30.12	765.0	55.9	13.3	85	Calm	0	0	.....	0	2k	.....	.....	0.02	0.6	Clear	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	56.8	13.8	80	SE	.....	.....	1	1cs	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.92	759.9	29.93	760.2	75.6	24.2	96	Calm	.....	.....	0	2	0	SSE	.....	0.186	4.7	Foggy	M. M. Cházaro.
San Luis Potosí	24.24	615.1	30.27	768.9	54.0	12.2	45	SE	.....	.....	.....	4	3	W	E	0	0	Misty.....	G. Barroeta, M. D.
Vera-Cruz	30.03	762.6	30.06	763.3	77.9	25.5	83	NW	1.3	0.6	.....	0	2sk	.....	.....	0.217	5.5	Foggy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.4	30.08	764.2	48.6	9.2	72	ESE	.....	.....	.....	1	0	Calm	.....	0.074	1.90	Clear	Prof. P. Spina.
Durango	24.21	614.8	30.04	762.9	61.7	16.5	76	Calm	.....	.....	0	0	0	.....	.....	0	0	Foggy.....	M. V. de Leon, C. E.
Colima	28.34	719.9	29.96	761.0	79.5	26.4	84	Calm	0	0	.....	0	2	.....	E	0	0	Clear.....	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Guernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosí, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,486 m., or 8,158.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.20	767.0	30.20	767.0	58.6	14.8	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	30.26	768.7	30.32	770.1	54.7	12.6	.....	E	.....	.....	2	.....	.....	.....	.....	0.004	0.1	.....	
Helder	30.27	768.8	30.27	768.8	55.6	13.1	.....	ENE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.21	767.4	30.21	767.4	57.2	14.0	89	E	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.21	767.2	30.25	768.4	57.9	14.4	58	ESE	.....	.....	4	.....	2	.....	.....	0	0	Light clouds	H. v d Brink
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.15	765.8	30.21	767.2	56.5	13.8	65	S	25.1	11.2	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.00	761.9	30.04	762.9	54.7	12.6	63	SSW	18	8	.....	.....	8	.....	.....	0	0	.....	
Christiania	30.13	765.4	30.28	769.2	47.5	8.6	91	WNW	0	0	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.54	750.2	29.58	751.3	50.7	10.4	85	SSW	25	11	.....	.....	10	.....	.....	0.315	8.0	Light rain...	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.05	763.3	30.24	768.2	61.5	16.4	77	WNW	1.8	0.8	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.90	734.1	29.90	759.5	73.8	23.2	41	SSE	4.9	2.2	.....	.....	7	SW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.91	759.7	30.00	761.9	74.5	23 6	64	WSW	19.9	8.9	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.55	750.6	29.91	759.7	66.2	19.0	59	SSW	11.2	5.0	.....	.....	9	SSW	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.16	766.1	30.23	767.9	65.5	18.6	52	NNE	14.3	6.4	.....	.....	4	.....	.....	0.118	3.0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	1	.....	D. clouds.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	2	.....	D. Clouds ...	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Wilna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dorpat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Petersburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kieff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kertch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Moscow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lugan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Archangel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tiflis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Astrakhan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Kasan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ekaterinburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tashkend	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barnaul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Yeniseisk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Peking, (China)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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The International Chart, based on this bulletin, will be delayed awaiting missing data to complete it.

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.84	757.9	29.94	760.5	66.2	19	65	E	3.5	1.56	.....	.....	3k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.77	756.1	29.82	757.5	73.8	23.2	51	SE	2.5	1.11	.....	2	3	SW	.....	0	0	Cloudy.....	Prof. Manuel de Naveras
Burgos, Met. Obs'y	26.95	684.4	.....	.....	64.4	18.0	67	N	3.4	1.52	.....	.....	.....	.....	.....	0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	28.11	713.9	29.87	758.8	69.6	20.9	48	SW	3.7	1.67	.....	8	0	W	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.72	755.0	29.87	758.7	77.9	25.5	42	SE	1.0	0.47	.....	4	3	S	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.88	733.5	29.76	755.9	61.5	16.4	69	SSW	15.5	6.94	.....	.....	10	.....	.....	0	0	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.99	761.6	30.05	763.3	77.6	25.4	79	E	7.4	3.3	.....	0	5k;ks	.....	ENE	0.020	0.5	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.82	757.4	29.91	759.8	74.1	23.4	56	S	22.7	10.2	.....	0	3	.....	S	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.62	757.4	29.91	759.7	81.0	27.2	89	SW	0	0	.....	1cs	2k	SE	SE	0	0	Clear.....	Leonardo de Toledo, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 856 meters, or 2,621.4 feet; Madrid 655.5 m., or 2,159.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.05	763.2	30.09	764.2	45.7	7.6	.....	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	30.07	763.7	30.12	765.0	51.4	10.8	77	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Hernosand	30.13	765.2	30.18	766.5	54.7	12.6	66	S	.....	.....	2	.....	1	.....	.....	0	0	.....	
Stockholm	30.18	766.6	30.36	771.1	46.4	8.0	94	SSW	.....	.....	2	.....	10	.....	.....	0.004	0.1	Foggy	
Wisby	30.27	768.8	30.33	770.3	48.9	9.4	92	NW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.26	768.5	30.33	770.4	47.7	8.7	93	SW	.....	.....	.....	.....	10	.....	.....	0.007	0.17	Foggy	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.46	723.5	29.92	759.9	51.1	10.6	74	E	.....	.....	2	.....	10	.....	.....	0	0	Covered	The Observatory.
Zurich	28.34	719.7	29.97	761.2	48.2	9.0	85	E	.....	.....	2	.....	10	.....	.....	0.012	0.3	Covered	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.7 mm.; Thermometer, —2.5 cent.; Relative Humidity, +2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Leo Observatory at Beirut.

Constantinople	.....	.....	30.23	767.9	70.2	21.2	67	NNW	13	6.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.4	73.8	23.2	.....	SW	.....	.....	3	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Leo Obs'y	29.96	761.0	30.07	763.8	83.0	27.8	46	N	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.99	761.7	30.06	763.5	49.0	9.4	81	W	3	1.3	.....	1c	0	SW	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.79	756.7	30.10	764.5	57	13.9	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N B	29.99	761.7	30.05	763.3	46	7.8	69	W	3	1.3	.....	2k	8ks	NW	NW	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.93	760.2	29.97	761.2	51	10.6	63	N	16	7.2	.....	0	0	.....	.....	0.820	20.83	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.89	759.2	30.08	764.0	49.1	9.5	84	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	29.89	759.2	30.05	763.3	42.6	5.8	76	W	.....	.....	1	.....	.....	.....	.....	0	0	Overcast	H. A. Johnson.
Esquimault, B. C	29.39	746.5	29.44	747.8	46.3	7.4	92	N	.....	.....	.....	9ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.02	762.5	30.04	763.0	42	5.6	83	S	16	7.2	.....	.....	10s	.....	W	0	0	Overcast	J. McWilliams.
Fredericton, N. B	30.08	764.0	30.14	765.5	43.1	6.2	67	NW	12	5.4	.....	c	0	.....	.....	0	0	Threatening	
*Fort Garry Manitoba	29.95	760.8	29.79	756.7	37	2.8	85	NW	5	2.2	.....	5k	5n	NW	NW	0	0	Clear	Prof. Harrison.
Granton, Ontario	28.96	735.6	30.06	763.5	52	11.1	.....	S	.....	.....	1	1cs	0	SE	.....	0	0	Cloudy	James Stewart.
*Halifax, N. S	29.84	757.9	29.98	761.5	46	7.8	78	NW	13	5.8	.....	0	0	.....	.....	0.05	1.3	Clear	James Grant.
Hamilton, Ontario	29.68	753.9	30.04	763.0	59.1	15.1	75	SW	.....	.....	2	0	0	.....	.....	0.124	3.15	Clear	F. Allison, M. A.
Heart's Content, N. F	29.46	748.3	29.49	749.0	48	8.9	68	NW	.....	.....	3	.....	10	.....	.....	0.01	0.3	Clear	Geo. Dickson, M. A.
*Kingston, Ontario	29.85	758.2	30.10	764.5	57	13.9	90	S	5	2.2	.....	5c	0	W	.....	0.45	11.4	Overcast	E. Weedon.
Little Glace Bay, N. S	29.50	749.3	29.53	750.0	49.5	9.7	68	NE	14	6.3	.....	7k	0	NE	.....	0	0	Fair	S. Woods, M. A.
*Montreal, Quebec	29.91	759.7	30.12	765.0	49	9.4	73	SW	12	5.4	.....	0	0	.....	.....	0.72	18.3	Clearing	C. H. Rigby.
*Parry Sound, Ontario	29.32	744.7	30.01	762.2	53	11.7	86	S	4	1.8	.....	5cs	2ks	S	S	0	0	Clear	C. H. McLeod, C. E.
Peterboro, Ontario	29.32	744.7	30.07	763.8	51.7	10.9	93	SE	.....	.....	0	3c	0	.....	.....	0	0	Fair	Rev. R. Mosley.
Port Dover, Ontario	29.37	746.0	30.05	763.3	59	15.0	88	S	5	2.2	.....	5ck	0	SW	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Hastings, N. S	29.87	758.7	29.92	760.0	50.5	10.3	.....	NW	20	8.9	.....	.....	.....	.....	.....	0.02	0.5	Fair	H. Morgan.
Port Stanley, Ontario	29.40	746.7	30.03	762.7	59	15.0	87	S	4	1.8	.....	2c	0	SE	.....	0	0	Fine	Peter Grant.
*Quebec, Quebec	29.82	757.4	30.15	765.8	41	5.0	82	NW	.....	.....	1	0	0	.....	.....	Inap.	Inap.	Clear	M. Payne.
*Rockliffe, Ontario	29.57	751.1	30.04	763.0	40	4.4	95	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Clear	Capt. Ashe, R. N
St. Andrews, N. B	30.06	763.5	30.11	764.8	42	5.6	74	NW	2	0.9	.....	0	0	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.91	759.7	30.08	764.0	45	7.2	76	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
*Saugeen, Ontario	29.27	743.4	29.98	761.5	53	11.7	82	SE	5	2.2	.....	5cs	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Stayner, Ontario	29.24	742.7	30.02	762.5	53	11.7	86	SE	5	2.2	.....	2c	0	W	.....	0.02	0.5	Fair	K. Stewart.
Stratford, Ontario	28 74	730.0	30.00	762.0	53.0	11.7	91	SW	5.0	2.2	.....	1cs	0	.....	.....	0	0	Fair	R. J. Cole.
*Sydney, C. B	29.83	757.7	29.86	758.4	59	10.0	66	NW	15	6.7	.....	0	8ks	.....	W	0.076	1.93	Clear	C. J. MacGregor, M. A
*Toronto, Ontario	29.67	753.6	30.06	763.5	50	10.0	96	Calm	0	0	.....	2ck	2ks	SW	SW	0.85	21.6	Fair	T. C. Hill.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Inap.	Inap.	Fair	Magnetic Observatory.
Sub-Series.																			Prof. John E. Oram.
St. Johns, Newfoundland	29.38	746.2	29.54	750.3	57	13.9	87	SW	.....	.....	.....	3c	3s	.....	.....	0.53	13.5	Cloudy	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,122 ft., or 360.8 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.96	761.0	30.19	766.8	51	10.6	72	S	1	0.4		2ck	Sm'e	W		0	0	Fair	
Alpena, Michigan	29.28	743.7	29.91	759.7	54	12.2	73	S	3	1.3		5ck	5s	SW	Calm	Inap.	Inap.	Cloudy	
Atlanta, Georgia	29.08	738.6	30.24	768.1	54	12.2	68	E	8	3.6		0	Fog		Calm	0	0	Clear	
Atlantic City, New Jersey	30.22	767.6	30.23	767.8	54	12.2	79	W	4	1.8		5k	0	NW		0	0	Fair	
Augusta, Georgia	30.13	765.3	30.32	770.1	53	11.7	93	Calm	0	0			Fog		W	0	0	Foggy	
Baltimore, Maryland	30.18	766.6	30.23	767.8	56	13.3	69	NW	1	0.4		5k	Fog	NW	Calm	0	0	Fair	
Barnegat, New Jersey	30.21	767.3	30.24	768.1	56	13.3	69	N	4	1.8		5c	0	NW		0	0	Fair	
Bismarck, Dakota	27.99	710 9	29.84	757.9	42	5.6	100	NW	4	1.8			10s		NW	0.37	9.4	Cloudy	
Boerne, Texas	28.46	722.9			72	22.2	85	SE	12	5.4		8k	0	S		0	0	Cloudy	
Boise City, Idaho	28.81	681.0	29.77	756.1	47	8.3	41	SE	8	3.6			10s		Calm	0.01	0.3	Cloudy	
Boston, Massachusetts	30.10	764.5	30.26	768.6	49	9.4	67	W	5	2.2		4ck	Haze	NW	Calm	0	0	Fair	
Brackettville, Texas	28.81	731.8	29.80	756.9	73	22.8	85	S	8	3.6		10cs	0	Calm		0	0	Cloudy	
Breckenridge, Minnesota	28.68	728.5	29.65	753.1	49	9.4	71	N	9	4.0			10s		SW	0	0	Cloudy	
Brownsville, Texas	29.92	760.0	29.98	761.5	78	25.6	86	SE	4	1.8		2k	0	SE		0	0	Fair	
Buffalo, New York	29.37	746.0	30.06	763.5	59	15.0	64	S	8	3.6		5k	0	W		0.05	1.3	Fair	
Burkes, Arizona					67	19.4	Inap.	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.94	760.5	30.21	767.3	50	10.0	65	S	4	1.8		0	1ks		Calm	0	0	Clear	
Cairo, Illinois	29.62	752.3	30.01	762.2	61	16.1	82	S	7	3.1		2ck	0	W		0	0	Fair	
Camp Apache, Arizona	24.97	634.2	29.97	761.2	47	8.3	48	NE			1	2k	0	Calm		0	0	Fair	
Camp Grant, Arizona	25.10	637.5	29.90	759.4	60	15.6	34	N			1	2k	0	S		0	0	Fair	
Camp Verde, Arizona	26.66	677.2	30.15	765.8	44	6.7	52	NW			1	0	0			0	0	Clear	
Campo, California	27.40	696.0	29.97	761.2	50	10.0	86	E	4	1.8		8k	0	E		0	0	Cloudy	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	61	16.1	77	N	6	2.7		0	0			0	0	Clear	
Cape Henry, Virginia	30.23	767.8	30.25	768.3	59	15.0	76	W	4	1.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	58	14.4	76	N	9	4.0		0	0			0	0	Clear	
Cape May, New Jersey	30.21	767.3	30.24	768.1	61	16.1	76	NW	3	1.3		5cs	0	W		0	0	Fair	
Castroville, Texas	29.19	741.4	29.87	758.7	73	22.8	90	S	4	1.8			10s		S	0	0	Cloudy	
Charleston, South Carolina	30.25	768.3	30.32	770.1	61	16.1	66	NE	5	2.2		0	0			0	0	Clear	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	31	—0.6	89	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.27	743.4	29.95	760.7	57	13.9	69	SW	12	5.4		2ck	5ks	SW	SW	0.17	4.3	Fair	
Cincinnati Ohio	29.49	749.0	30.14	765.5	60	15.6	74	SE	6	2.7		4k	0	SW		0.02	0.5	Fair	
Cleveland, Ohio	29.35	745.5	30 07	763.8	56	13.3	63	SE	8	3.6		0	Sm'e		Calm	0.02	0.5	Clear	
Coleman City, Texas	28.14	714.7	29.74	755.4	70	21.1	85	S	8	3.6		0	8s		S	0	0	Fair	
Columbus, Ohio	29.30	744.2	30.14	765.5	57	13.9	81	S	5	2.2		2k	5n	S	SW	0.40	10.2	Light rain	
Concho, Texas	28.00	711.2	29.61	752.1	71	21.7	80	S	12	5.4		0	10s		S	0	0	Cloudy	
Corsicana, Texas	29.52	749.8	29.97	761.2	69	20.6	90	S	8	3.6		0	0			0	0	Clear	
Davenport, Iowa	29.17	740.9	29.78	756.4	63	17.2	83	S	8	3.6		4ck	0	SW		0	0	Fair	
Decatur, Texas	28.77	730.7	29.89	759.2	69	20.6	90	S	18	8.0			10ks		S	0	0	Cloudy	
Denison, Texas	29.15	740.4	29.91	759.7	72	22.2	80	S	16	7.2		10k	0	S		0	0	Cloudy	
Denver, Colorado	24.70	627.4	29.92	760.0	40	4.4	56	S	6	2.7		0	0			0	0	Clear	
Des Moines, Iowa	28.77	730.7	29.60	751.8	65	18.3	89	SW	3	1.3		0	Haze		Calm	0	0	Clear	
Detroit, Michigan	29.32	744.7	29.97	761.2	54	12.2	80	SW	5	2.2		0	0			0	0	Clear	
Dodge City, Kansas	27.18	690.4	29.42	747.3	49	9.4	85	W	8	3.6		0	1s		Calm	0	0	Clear	
Dubuque, Iowa	29.05	737.9	29.73	755.1	57	13.9	81	S	6	2.7			Fog		S	0	0	Foggy	
Duluth, Minnesota	28.99	736.3	29.65	753.1	50	10.0	86	Calm	0	0			10s		Calm	0	0	Cloudy	
Eagle Pass, Texas	29.14	740 1	29.85	758.2	71	21.7	90	SE	5	2.2		Haze	2s		S	0	0	Fair	
Eastport, Maine	30.07	763.8	30.14	765.5	44	6.7	76	W	8	3.6		0	Haze		Calm	0.01	0.3	Clear	
Edinburg, Texas					76	24 4	91	SE			1	2ck	5s	SE	SE	0	0	Fair	
El Paso, Texas					70	21.1	52	NW	4	1.8		0	5s		NW	0.03	0.8	Fair	
Erie, Pennsylvania	29.35	745.5	30.06	763.5	58	14.4	64	S	9	4.0		0	0			0	0	Clear	
Escanaba, Michigan	29.16	740.7	29.80	756.9	55	12.8	81	SE	8	3.6			10s		S	0	0	Cloudy	
Florence, Arizona	28.34	719.8	29.94	760.5	55	12.8	68	N			1	0	0			0	0	Clear	
Fort Craig, New Mexico	26.4[illegible]	646.2	29.51	749.6	52	11.1	35	S	2	0.9		0	0			0	0	Clear	
Fort Davis, Texas	25.16	739.0	30.12	765.0	68	20.0	38	W	5	2.2		2k	0	SW		0	0	Fair	
Fort Gibson, Indian Ter	29.36	745.7	29.87	758.7	70	21.1	90	S	12	5.4		2k	0	S		0	0	Clear	
Fort Griffin, Texas	28.63	727.2	29.85	758.2	72	22.2	71	S	8	3.6			10s		S	0	0	Cloudy	
Fort McKavett, Texas	27.82	706.6	29.68	753.9	67	19.4	74	S	12	5.4		5k	0	NW		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.64	727.4	29.70	754.4	69	20.6	65	S	12	5.4		0	2s		S	0	0	Fair	
Fredericksburg, Texas	28.23	717.0	29.73	755.1	72	22.2	67	S	6	2.7			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.99	761.7	30.03	762.7	77	25.0	69	S	6	2.7		5k	0	S		0	0	Fair	
Graham, Texas	28.82	732.0	29.83	757.7	70	21.1	80	S	5	2.2		0	0			0	0	Clear	
Grand Haven, Michigan	29.25	742.9	29.88	758.9	59	15.0	70	S	12	5.4		2k	0	W		0	0	Fair	
Indianapolis, Indiana	29.25	742.9	30.01	762.2	60	15.6	65	SE	7	3.1		0	0			0	0	Clear	
Indianola, Texas	29.99	761.7	30.02	762.5	77	25.0	77	S	9	4.0		1k	0	S		0	0	Clear	
Jacksboro, Texas	28.75	730.2	29.84	757.9	70	21.1	75	S	10	4.5		0	0			0	0	Clear	
Jacksonville, Florida	30.22	767.6	30.24	768.1	65	18.3	84	NE	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	29.17	740.9	29.76	755.9	66	18.9	84	S	12	5.4		1k	0	SW		0	0	Clear	
Key West, Florida	30.05	763.3	30.08	764.0	77	25.0	77	NE	17	7.6		5ck	0	SW		0.01	0.3	Fair	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	56	13.3	75	NW	8	3.6		0	0			0	0	Clear	
Knoxville, Tenne-see	29.27	743.4	30.30	769.6	47	8.3	92	Calm	0	0		0	Fog		E	0	0	Clear	
La Crosse, Wisconsin	28.96	735.6	29.67	753.6	55	12.8	93	S	10	4.5		1k	0	S		0	0	Clear	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	51	10.6	72	SW	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.50	749.3	29.82	757.4	78	25.6	86	SE	7	3.1		10k	0	SE		0	0	Cloudy	
Lead City, Dakota	24.68	626.9	29.95	760.7	33	0.6	70	SW	1	0.4			Fog		Calm	Inap.	Inap.	Foggy	
Leavenworth, Kansas	28.82	732.0	29.62	752.3	68	20.0	79	S	12	5.4		0	0			0	0	Clear	
Los Angeles, California	29.58	751.3	29.92	760.0	57	13.9	81	N	4	1.8			10s		SE	0	0	Cloudy	
Louisville, Kentucky	29.56	750.8	30.12	765.0	61	16.1	71	S	8	3.6		2ck	Sm'e	S	S	0	0	Fair	
Lynchburg, Virginia	29.57	751.1	30.27	768.8	49	9.4	71	Calm	0	0		2cs	0	Calm		0	0	Clear	
Madison, Wisconsin	28.80	731.5	29.76	755.9	55	12.8	87	SE	7	3.1		0	0			0	0	Clear	
Marquette, Michigan	29.09	738.9	29.78	756.4	51	10.6	79	S	4	1.8		10c	0	S		0	0	Cloudy	
Mason, Texas	28.35	720.1	30.03	762.7	75	23.9	68	SE	8	3.6			10s		SE	0	0	Cloudy	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.10	739.1	29.81	757.2	54	12.2	87	SW	9	4.0		5c	1s	Calm	Calm	0.02	0.5	Fair	
Mobile, Alabama	30.14	765.5	30.19	766 8	61	16.1	91	SE	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.99	761.7	30.23	767.8	57	13.9	87	SE	1	0.4		0	0			0	0	Clear	
Morgantown, West Virginia	29.13	739.9	30.19	766.8	51	10.6	72	W	1	0.4		1k	Fog	SW	Calm	0	0	Clear	
Mt. Washington, N. H.	23.94	608.1	30.30	769.6	35	1.7	52	NW	25	11.2		0	2s		NW	0	0	Clear	
Nashville, Tennessee	29.64	752.8	30.18	766.6	57	13.9	75	SE	2	0.9		1c	0	Calm		0	0	Clear	
New Haven, Connecticut	30.12	765.0	30.24	768.1	52	11.1	73	N	1	0.4		5ck	Haze	NW	Calm	0	0	Fair	
New London, Connecticut	30.20	767 1	30.25	768.3	52	11.1	60	N	4	1.8		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	30.06	763.5	30.12	765.0	72	22.2	85	N	2	0.9		5k	Haze	E	Calm	0	0	Fair	
Newport, Rhode Island	30.20	767.1	30.25	768.3	52	11.1	73	NE	4	1.8		4k	0	NW		0	0	Fair	
New York, New York	30.07	763.8	30.25	768.3	58	14.4	64	E	2	0.9		5ck	Haze	SW	Calm	0	0	Hazy	
Norfolk, Virginia	30.21	767.3	30.27	768.8	55	12.8	81	NW	1	0.4		0	Haze			0	0	Clear	
North Platte, Nebraska	26.86	682.2	29.40	746.7	43	6.1	59	NW	12	5.4		0	Haze		Calm	0	0	Hazy	
Olympia, Washington Ter.	29.32	744.7	29.36	745.7	43	6.1	92	N	4	1.8			10s		Calm	0.15	3.8	Cloudy	
Omaha, Nebraska	28.45	722 6	29.16	748.3	63	17.2	83	S	6	2.7		0	Haze		Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.80	756.9	30.13	765.3	54	12.2	80	S	7	3.1	.....	5c	0	NW	.....	0	0	Fair	
Pembina, Dakota	28.92	734.6	29.75	755.6	40	4.4	91	NW	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.19	766.8	30.25	768.3	56	13.3	69	SW	1	0.4	.....	0	8ks;fg	.....	Calm	0	0	Cloudy	
Phœnix, Arizona	28.69	728.7	.....	.....	57	13.9	52	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.72	449.6	29.92	760.0	18	— 7.8	68	SW	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.87	606.3	29.64	752.8	44	6.7	45	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.33	745.0	30.14	765.5	55	12.8	68	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Port Huron, Michigan	29.32	744.7	29.98	761.5	56	13.3	75	S	9	4.0	.....	0	0	.....	.....	0.03	0.8	Clear	
Portland, Maine	30.17	766.3	30.22	767.6	50	10.0	65	W	4	1.8	.....	2k	Haze	NW	.....	0	0	Fair	
Portland, Oregon	29.20	743.2	29.36	745.7	43	6.1	92	NW	6	2.7	.....	.....	10n	.....	Calm	0.51	13.0	Heavy rain	
Prescott, Arizona	24.68	626.9	30.04	763.0	39	3.9	55	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Punta Rassa, Florida	30.12	765.0	30.14	765.5	72	22.2	67	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.31	744.5	29.67	753.6	51	10.6	86	SE	36	16.1	.....	.....	10n	.....	SE	0.31	7.9	Light rain	
Rio Grande City, Texas	29.79	756.7	30.00	762.0	73	22.8	81	SE	.....	.....	2	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.48	748.8	30.09	764.3	58	14.4	58	SW	6	2.7	.....	2c	Haze	W	Calm	0	0	Fair	
Roseburg, Oregon	28.63	727.2	29.16	740.7	50	10.0	71	SE	9	4.0	.....	.....	10n	.....	Calm	0.88	22.4	Light rain	
Sacramento, California	29.76	755.9	29.84	757.9	53	11.7	86	S	11	4.9	.....	.....	10n	.....	S	0.07	1.8	Light rain	
St. Louis, Missouri	29.36	745.7	29.92	760.0	64	17.8	68	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.21	767.3	30.23	767.8	64	17.8	89	E	4	1.8	.....	0	9s	.....	E	0	0	Cloudy	
St. Paul, Minnesota	28.70	730.5	29.55	750.6	54	12.2	86	SE	5	3.6	.....	5c	Haze	Calm	.....	0	0	Fair	
Salt Lake City, Utah	25.40	645.2	29.73	755.1	42.0	5.6	74	E	2	0.9	.....	0	0	.....	.....	0.15	3.8	Clear	
San Antonio, Texas	29.28	743.7	29.85	758.2	73	22.8	90	SE	2	0.9	.....	.....	10s	.....	SE	0	0	Cloudy	
San Diego, California	29.90	759.4	29.97	761.2	62	16.7	77	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.38	746.2	30.04	763.0	56	13.3	75	SW	18	8.0	.....	0	0	.....	.....	0.03	0.8	Clear	
Sandy Hook, New Jersey	30.20	767.1	30.23	767.8	61	16.1	66	Calm	0	0	.....	8k	0	NW	.....	0	0	Cloudy	
San Francisco, California	29.76	755.9	29.82	757.4	56	13.3	84	SE	12	5.4	.....	.....	10n	.....	SE	0.08	2.0	Heavy rain	
Santa Fé, New Mexico	23.23	590.0	29.77	756.1	46	7.8	40	Calm	0	0	.....	0	5s	.....	SW	0	0	Fair	
Savannah, Georgia	30.19	766.8	30.28	769.1	61	16.1	88	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.83	757.7	30.05	763.3	69	20.6	85	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.26	616.2	.....	.....	48	8.9	62	SW	6	2.7	.....	5k	0	W	.....	0	0	Fair	
Smithville, North Carolina	30.27	768.8	30.31	769.9	54	12.2	74	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.12	765.0	30.25	768.3	51	10.6	72	SE	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Stockton, Texas	26.88	682.7	29.88	758.9	66	18.9	54	SE	8	3.6	.....	4k	0	SE	.....	0	0	Fair	
Thatcher's Island, Mass	30.22	767.6	30.26	768.6	51	10.6	73	NW	1	0.4	.....	1ck	0	NW	.....	0	0	Clear	
Toledo, Ohio,	29.32	744.7	29.99	761.7	58	14.4	64	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	62	16.7	52	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.24	768.1	30.27	768.8	68	20.0	79	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.14	740.1	.....	.....	48	8.9	56	E	12	5.4	.....	.....	10s	.....	E	Inap.	Inap.	Threatning	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	92	SW	.....	.....	6	0	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.08	738.6	29.87	758.7	73	22.8	81	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.90	759.4	30.16	766.1	63	17.2	94	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.03	610.4	29.51	749.5	26	— 3.3	75	Calm	0	0	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Visalia, California	29.59	751.6	29.97	761.2	42	5.6	74	SW	1	0.4	.....	0	5s	.....	Calm	0	0	Fair	
Washington, D. C.	30.12	765.0	30.24	768.1	55	12.8	84	NW	2	0.9	.....	2ck	Fog	NW	Calm	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	49	9.4	64	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.21	767.3	30.29	769.4	50	10.0	86	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.29	642.4	29.65	753.1	39	3.9	64	SW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Wood's Holl, Mass	30.21	767.3	30.26	768.6	51	10.6	78	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.33	719.6	29.59	751.6	47	8.3	62	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.59	751.6	29.76	755.9	58	14.4	62	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.95	760.7	30.00	762.0	26.5	— 3.1	94	E	9	4.0	.....	4k	4s	N	N	Inap.	Inap.	Cloudy	J. Fortescue, W. Wood.
Havana, Cuba. W. I.	30.04	763.0	30.06	763.5	79	26.1	78	NE	2.4	1.1	.....	4k	4n	NE	NE	0.01	0.3	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	86	30.0	79	Calm	0	0	.....	0	2ks	.....	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	79	26.1	88	Calm	0	0	.....	8c?	8n?	Calm	.....	0.26	6.6	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	84	28.9	.....	NE	17.5	7.8	.....	.....	.....	.....	.....	0	0	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	30.00	762.0	84	28.9	73	NE	.....	.....	1	3c	5k	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.23	640.8	.....	.....	64.2	17.9	82	Calm	0	0	.....	8cs	0	.....	.....	0.35	8.9	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.75	755.6	30.06	763.5	72	22.2	95	SE	.....	.....	.....	k	k	.....	.....	.....	.....	Squally	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.: Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,806 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.30	769.6	69	20.6	70	21.1	75	NE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
NavyYard,Portsmouth,N.H	30.21‡	767.3‡	.....	.....	41	5.0	??	SW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.14*	765.5*	59.5	15.3	54	12.2	97	N	.....	.....	4	.....	10n	.....	N	1.25	31.7	.....	.....	Heavy rain.	
Adams. S. 34° 50', W. 74° 10'.....	30.06	763.5	70	21.1	59	15.0	88	WSW	.....	.....	3-4	.....	10	.....	WSW	.....	.....	Smooth	WSW	Cloudy.....	
Alaska, S 19° 38' W. 75° 41'.....	30.20	767.1	64	17.8	60	15.6	76	SSE	.....	.....	1	.....	10	.....	SE	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	30.19‡	766.8‡	.....	.....	73	22.8	67	W	.....	.....	2-3	.....	4	.....	Calm	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.08	763.5	64	17.8	62	16.7	94	N	.....	.....	2	.....	10	.....	Calm	.....	.....	Smooth	.....	Raining.....	
Canonicus, New Orleans, La.....	30.08	764.8	54	12.2	76	24.4	95	S	.....	.....	2	.....	5	.....	.....	.....	.....	...	.....	Fair	
Colorado New York, N. Y.....	30.25‡	768.3‡	.....	.....	58	14.4	64	SE	3	1.3	.....	.....	8	.....	S	0	0	.....	.....	Foggy.....	
Constitution, Havre, France.....	.....	.....	.....	.....	58	14.4	76	E	.....	.....	2	.....	9	.....	.....	.....	.....	.....	.....	Clear.....	
Despatch, Constantinople, Turkey	30.25‡	768.3‡	.....	.....	74	23.3	68	NE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, S. 37° 18', E. 2° 52'.....	29.98	761.5	57	13.9	56	13.3	94	W	.....	.....	4	.....	8	.....	W	.....	.....	Light	W	Cloudy.....	
Franklin, Norfolk, Va.....	30.35	770.9	69	20.6	56	13.3	94	NW	2.4	1.1	.....	.....	2	.....	NW	0	0	.....	.....	Clear	
Gettysburg Port Said, Egypt.....	30.00‡	762.0‡	.....	.....	79	26.1	100	NE	.....	.....	4	.....	0	.....	.....	0	0	Light	SW	Clear.....	
Guard. S. 1° 34', W. 36° 14'.....	30.00	762.0	81	27.2	80	26.7	78	E	....	.....	4	.....	2	.....	E	.....	.....	Mod'ate	E	Clear.....	
Hartford, Santos, Brazil.....	30.15	765.8	.....	.....	69	20.6	61	Calm	0	0	.....	.....	2	.....	.....	0	0	Smooth	.....	Clear	
Marion, Trieste, Austria.....	29.89	759.2	62	16.7	59	15.0	100	ENE	.....	.....	5	.....	10	.....	.....	Heavy	Heavy	.....	.....	Light rain ..	
Michigan, Erie, Pa.....	29.99†	761.7†	.....	.....	54	12.2	80	SE	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy, Yokohama, Japan	30.18‡	766.6‡	.....	.....	55	12.8	93	NNW	.....	.....	3-5	.....	10	.....	NW	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.....	30.49	774.4	82	27.8	73	22.8	76	NE	18	8.0	.....	.....	.....	.....	NNE	0	0	.....	.....	Clear...	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	62	16.7	83	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.11	764.8	59	15 0	51	10.6	93	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Misty.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	51	10.6	100	E	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear.....	
Plymouth. N. 28° 45', W. 62° 33'.....	30.11	764.8	77	25.0	77	25.0	62	NNW	.....	.....	4	.....	2	.....	NW	.....	.....	Mod'ate	NW	Clear.....	
Powhatan, Portsmouth, N. H.....	30.24‡	768.1‡	.....	.....	53	11.7	67	S	4.8	2.1	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	30.15	765.8	81	27.2	82	27.8	87	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo, Brownsville, Texas.....	29.96	761.0	78	25.6	78	25.6	95	SE	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md	30.10‡	766.8‡	.....	.....	61	16.1	77	SSW	.....	.....	1	.....	8	.....	NW	.....	.....	.....	.....	Cloudy.....	
Saratoga. Philadelphia, Pa.....	30.14	765.5	.....	.....	53	11.7	80	Calm	.....	.....	0	.....	7	.....	.....	0	0	.....	.....	Clear?.....	
St. Louis, League Island, Pa.....	30.13	765.3	59	15.0	54	12.2	87	SE	3	1.3	.....	.....	5	.....	NNW	0	0	.....	.....	Fair.....	
Supply, Havre, France.....	30.09	764.3	57	13.9	59	15.0	59	SE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Swatara, Boston, Mass.....	30.26‡	768.6‡	.....	.....	57	13.9	81	NNW	.....	.....	1	.....	2	.....	WNW	.....	.....	... ...	.....	Hazy.....	
Trenton, N. 37° 06', W. 0° 36'.....	29.92‡	760.0‡	.....	.....	62	27.8	67	SW	.....	.....	1	.....	2	.....	E	0	0	Smooth	.....	Clear.....	
Tuscarora, N. 37° 00', W. 122° 30'	29.81	757.2	57	13.9	57	13.9	61	ENE	.....	.....	1	.....	10	.....	E	0	0	Long	NW	Cloudy	
Vandalia, Gibraltar.....	29.91‡	759.7‡	.....	.....	69	20.6	70	ESE	.....	.....	2	.....	8	.....	SE	.....	.....	.....	.....	Cloudy.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	61	16.1	55	W	.....	.....	1	.....	5	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Red'ced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Upper 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 35° 08′, E. 172° 38′		30.05*	763.3*	71	21.7	95	NW			3		10		W	Mod'ate	Mod'ate	W	Raining	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 13° 28′, W. 89° 18′		29.98*	761.5*	78	25.6	??	N			2		8		Calm	Blank	Mod'ate	S	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.84*	757.9*	57	13.9	81	SE			4–6		10			Heavy			Wet	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic N. 41° 15′, W. 61° 44′		29.93*	760.2*	60	15.6	??	NNW			6				W	Blank	Heavy	N	Overcast	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic																			Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Ridley.
S. S. Oceanic, N. 24° 15′, E. 118° 40′		29.97	761.2	77	25.0	86	NE			4		9		NE		2	NE	Drizzling	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Delaware Bay		30.24*	768.1*	70	21.1	100	NNW			1		0			0			Clear	Captain Sargent.
S. S. Ohio, St. George's Channel		30.02	762.5	56	13.3	??	E			5		7		Calm	0	None		Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

Note.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Laguayra, Venezuela		29.95	758.2	88	31.1	69	ENE	2	0.9			2ck		NE	0	Swell	NE	Clear	Capt. James Jorgensen.

Note.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 15, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.95	760.6	71.1	21.7	72	W	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Kesxuche.
Algiers	.....	.....	29.84	757.9	77.4	25.2	72	NE	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Tourillere.
La Calle	.....	.....	29.95	760.6	78.1	25.6	65	ENE	.....	.....	3	.....	2	.....	.....	0	0	Fair	Foufrede.
Tunis	.....	.....	29.95	760.6	82.2	27.9	63	NE	.....	.....	5	.....	0	.....	.....	0	0	Clear	Jacques.
Sfax	.....	.....	30.06	763.5	80.6	27.0	.....	ENE	.....	.....	3	.....	0	.....	.....	0	0	Clear	Gau.
Saida	.....	.....	29.89	759.1	73.4	23.0	63	N	.....	.....	6	.....	3	.....	.....	0	0	Pretty fair	Herbin.
Tebessa	.....	.....	30.00	762.1	81.5	27.5	20	WSW	.....	.....	6	.....	3	.....	.....	0	0	Pretty fair	Watrin.
Geriville	.....	.....	29.93	760.3	79.9	26.6	44	SSE	.....	.....	7	.....	9	.....	.....	0	0	Covered	Brugniaux.
Laghouat	.....	.....	30.07	763.8	84.2	29.0	40	ENE	.....	.....	6	.....	5	.....	.....	0	0	Cloudy	Bertrand.
Biskra	.....	.....	30.03	762.7	83.3	28.5	39	NW	.....	.....	5	.....	2	.....	.....	0	0	Fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.42	747.3	29.97	761.1	60.3	15.7	87	SW	.....	.....	1	.....	9	.....	.....	0.039	1.0	.....	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.30	744.2	30.07	763.8	51.4	10.8	93	ENE	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	Dr. Wierzbiski
Eperies	29.18	741.2	30.13	765.3	58.6	14.8	74	N	.....	.....	3	.....	10c;s	.....	.....	0	0	.....	Julius Mikolik.
Gratz	28.70	728.9	29.93	760.2	61.2	16.2	77	S	.....	.....	2	.....	6	.....	.....	1.567	39.80	.....	Andreas Rospini.
Hermannstadt	28.60	726.3	30.05	763.2	64.0	17.8	56	SE	.....	.....	3	.....	3	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.55	725.1	29.87	758.8	56.5	13.6	85	W	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	29.12	739.6	30.11	764.7	55.4	13.0	94	SE	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.36	758.4	29.97	761.2	63.5	17.5	81	WNW	.....	.....	1	.....	9ks	.....	.....	0.917	23.3	.....	I.R.Hydrographic Office.
Szathmar	29.63	752.5	30.08	764.1	65.7	18.7	58	E	.....	.....	2	.....	10	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.72	754.8	29.99	761.8	61.9	16.6	85	S	.....	.....	4	.....	10	.....	.....	0.173	4.40	.....	Karl Stancel.
Trieste	29.89	759.1	29.99	761.7	62.6	17.0	90	Calm	.....	.....	0	.....	10	.....	.....	0.220	5.60	Raining	P. Busin.
Vienna	29.22	742.3	29.95	760.8	57.9	14.4	87	SE	.....	.....	2	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Szegedin, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.48	723.3	29.99	761.8	50.9	10.5	83	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.76	756.0	29.97	761.1	55.0	12.8	76	ENE	.....	.....	2	10	.....	ESE	.....	0	0	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Foggy	M. E. de Cae.
Maeseyck	29.87	758.7	30.00	762.0	56.1	13.4	66	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

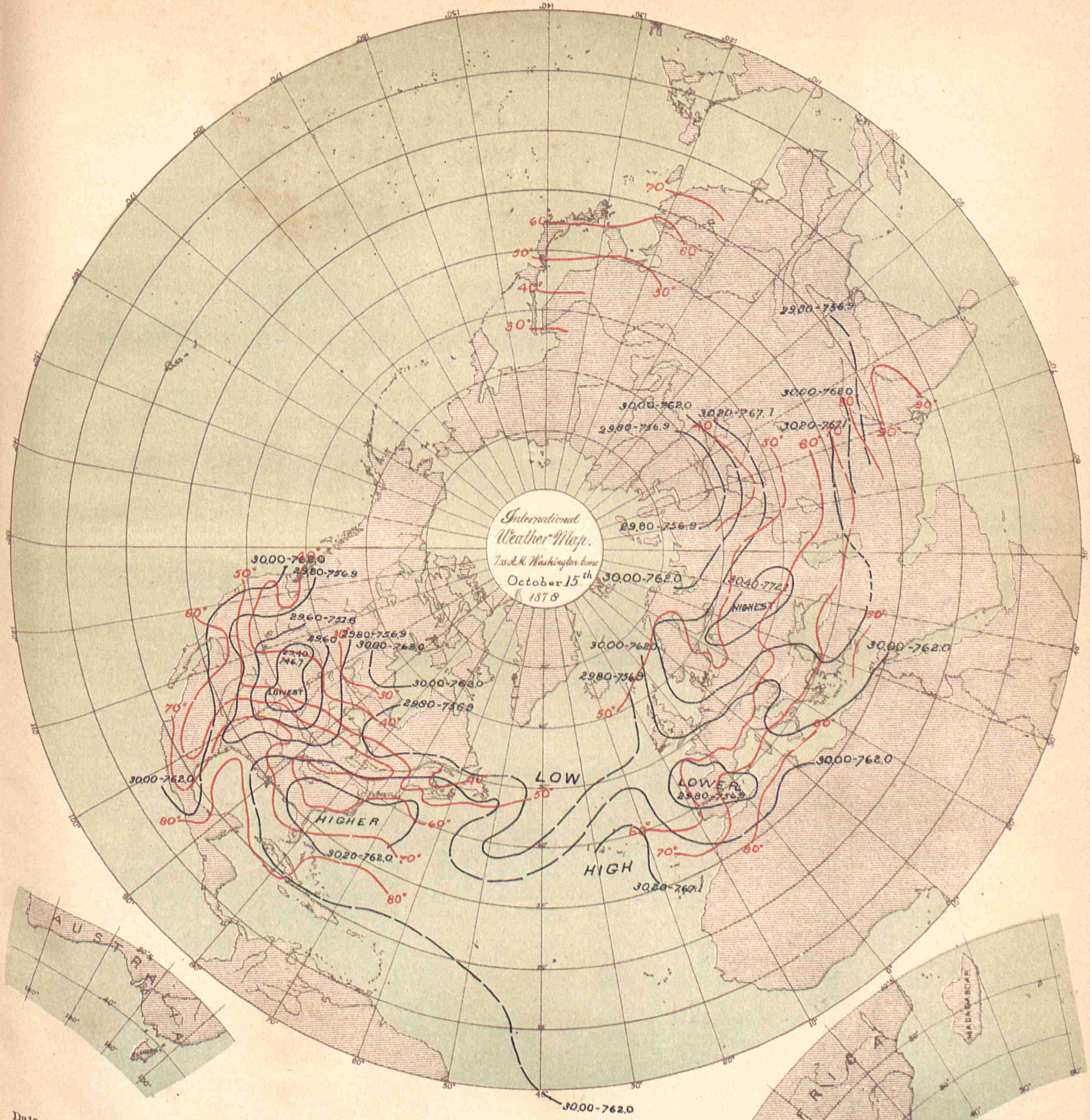
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.06	763.5	30.16	766.1	54.6	12.6		SE	18	8.0			7			0	0	D. clouds	W. Boswell.
Ardrossan	30.02	762.5	30.04	763.0	59	15.0		SE			2		4					D. clouds	George Carrick.
Armagh, Observatory			30.00	762.0	57.6	14.2		SE	12	5.4									S. Call.
Bidston, (Liverpool Obs.)			30.04	763.0	52.9	11.6		ESE	5	2.2			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.66	753.4	30.06	763.5	53 7	12.1		E			2		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	85	29.4		SE			1		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.01	762.2	58.0	14.4		E			1		10					Overcast	H. Todd. [H. C.
Cardington			30.02	762.5	57.0	13.9		E			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.86	758 4	29.99	761.7	55.7	13.2		SE			2		9					Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.46	722.9	29.92	760.0	52.0	11.1		E			1		7					Gloomy	Alexander Watt.
Donaghadee	30.00	762.0	30.03	762.7	57	13.9		SSE			3		2					D. clouds	J. Mac Gowan.
Dover	29.95	760.7	29.97	761.2	57	13.9		E			3		6					⅜ clouded	J. Costello.
Falmouth, Observatory								E			2		7					Overcast	The Staff.
Fort Napier, (Natal)	27.08	687.8	29.40	746.7	86.4	30.2		W			5		8					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.78	756.4	30.01	762.2	76	24.4		E			1		3					D. clouds	
Galway, Queen's College			29.91	759.7	55	12.8		SE			1		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.35	758.2	29.90	759.4				W			2		7			Blank	Blank	Gloomy	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.86	758.4	30.07	763.8	54.5	12.5		NE			3		7					D. clouds	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.04	763.0	55	12.8		E			4		7					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.81	757.2	29.98	761.5	56.7	13.7		ENE			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.69	754.1	29.91	759.7	55.5	13.1		NE			2		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.97	761.2	60	15.6		E			0		3ck			0	0	Fine	M. P. Moyle.
Holyhead	29.96	761.0	30.02	762.5	57	13.9		E			2		2					Blue sky	John Tilston.
Jersey	29.69	754.1	29.93	760.2	55.1	12.8		E			2		10					Gloomy	J. Fisher.
Kew, Observatory	29.94	760.5	29.98	761.5	55.4	13.0		E	3	1.3			10					Misty	The Staff.
Kingstown	29.98	761.5	30.01	762.2	57	13.9		SE			3		5					D. clouds	George Mitchell.
Leicester, Museum			30.03	762.7	55.0	12.8		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.89	759.2	29.96	761.0	81	27.2		SSE			2		0					Blue sky	Sergt. Beckett.
Nairn	29.96	761.0	30.05	763.3	58	14.4		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	77.8	25.4		NE			3		8					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.88	758.9	30.07	763.8	55.7	13.2		E			1		10c;k		ENE	0.008*	0.20*	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.49	749.0	30.02	762.5	53.8	12 1		ENE			2		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.99	761.7	55	12.8		Calm			0		10					Gloomy	H. E. Bellamy.
Plymouth	29.86	758.4	29.94	760.5	56.3	13.5		SE			2		10					Overcast	John Merrifield.
Roche's Point	29.92	760.0	29.96	761.0	59	15.0		SSE			4		8					Cloudy	W. Kennedy.
Saint Ann's Head	29.80	756.9	29.96	761.0	58	14.4		ESE			3		5					D. clouds	John O. Walker.
Sandwick Manse, (Orkneys)			30.06	763.5	54	12.2		SSE	34	15.2			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.13	765.3	71.2	21.8		SW			1		7					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.79	756.7	30.07	763.8	53.1	11.7		ENE			1		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth, Rectory	30.03	762.7	30.06	763.5	57.8	14.3	73	W			3		7			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.67	753.6	30.08	764.0	52.6	11.4		E			1		10					Overcast	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.77	756.1	29.98	761.5	55.4	13.0		E			0–1		10					Foggy	Rev. C. H. Griffith, F. M. S.
Thurso	29.98	761.5	30.04	763.0	57	13.9		S			4		4					D. clouds	John Trotter.
Truro, Royal Institution			29.92	760.0	63	17.2		SE			4		10					Gloomy	W. Newcombe.
Valencia, Observatory	29.83	757.7	29.85	758.2	54.5	12.6		NNE	11	4.9			10					Drizzling	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.42	747.3	44.0	6.7	81	SW			5		10km			0.06	1.5	Squally	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.93	760.2	30.12	765.0	77.6	25.3	56	ESE	14.0	6.3		1	2		E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.88	758.9	29.97	761.2	47.8	8.8	68	NW	13	5.8			4			0.25	6.4	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m. *Dew

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer
Brig Catherine, N. 42° 10′, W. 56° 30′	7	Confused.	Showery	Capt. Alex. Wilson.
Barque Commewyne, N. 12° 20′, W. 52° 40′	2	NNE	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle				Capt. W. Waring.
Barque Margaret Smith, N. 20° 55′, W. 67° 5′	7	Confused.	Squally	Capt. D. W. A. Quaile.
Schooner Traveller				Capt. Alex. Simpson.
Barque Virginia				Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			Mr. Ansart.
San José	26.24	665.5	29.96	761.0	68.0	20.0	98	SE			1		9s			0	0		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.26	768.7	30.31	769.9	53.1	11.7	85	E			4		5						
Fanöe	30.23	767.8	30.25	768.3	54.5	12.5	86	ENE			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.87	758.6	29.90	759.5	52.0	11.1	86	SSW			4		10						
Vestervig	30.13	765.3	30.30	769.6	51.1	10.6	85	E			2		2						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.42	747.2	29.97	761.2	54.0	12.2	81	E			3		5		W	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.85	758.1	29.96	760.9	61.2	16 2	80	NE			2		5		NW	0	0	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.84	758.0	29.92	760.0	66.9	19.4	57	NNE			1		0			0	0	Clear	M. Girand, Director.
Bar-sur-Seine	29.36	745.8	29.91	759.8	58.3	14.6	60	SSE			2		5m		SE	0	0	Cloudy	C. Saillard.
Beauvais, Normal School	29.67	753.6	29.95	760.8	58.1	14.5	67	E			2		8		E	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon	29.08	738.5	29.96	760.9	59.0	15	84	E			2		1		N	0	0	Clear	Normal School.
Bourg-en-Bresse, N. School	29.08	738.6	30.00	761.9	60.6	15.9	61	SW			3	2c			SW	0	0	Slightly cl'dy	M. Marlot, Director.
Bourges, Normal School	29.33	744.9	29.87	758.8	58.8	14.9	69	E			2		1		E	0	0	Clear.	A. Wagner, Director.
Brest, Naval Observatory	29.61	752.2	29.85	758.3	60.1	15.6	68	E			1		4k		E	0	0		The Staff.
Carcassonne, Normal School	29.47	748.5	29.87	758.8	69.1	20.6	53	W			2		0			0	0	Clear.	Septembre, Director.
Caen	29.80	757.0	29.88	758.9	57.6	14.2	67	SSE			2		8		SE	0	0	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.34	745.1	29.91	759.6	52.2	11.2	97	NE			1		10			0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.58	751.2	29.89	759.1	62.6	17.0	70	SE			1		2k			0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.51	724.2	29.71	754.7	64.4	18.0	56	SW			1		0			0	0	Clear	Allnard, Director.
Commercy, Normal School	29.50	749.4	29.98	761.6	55.6	13.1	77	E			1		kn		E	0	0		Dr. Coulet, Director.
Commune de Gréasque*	28.85	732.7	29.99	761.7	63.9	17.7	67	SE			2		5	SE		0	0	⅛ covered	M. Kina.
Grenoble, Normal School	29.11	739.5	29.87	758.8	57.2	14	82	ESE			1		1k			0	0	Clear	M. Ablard, Director.
La Roche-sur-Yon, N. School																			Mouillot, Director.
Le Mans, Normal School	29.61	752.1	29.92	759.9	54.9	12.7	72	SE			2		8		SE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.03	737.3	29.94	760.4	57.6	14.2	73	NE			1		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	29.80	756.9	29.90	759.5	59.7	15.4	58	ENE			3			NE	SE	0	0		T. Carré, Director.
Mâcon, Normal School					54.0	12.2	65	E			1		0			0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	28.92	734.6	29.96	760.9	56.8	13.8	69	NW			1		5k		SE	0.04	1.	Cloudy	M. Barbier, Director.
Nismes, Normal School	29.65	753.1	29.85	758.1	71.6	22	75	E			1		5		E	0	0	Cloudy	Boyer, Director.
Orleans	29.98	761.6	30.02	762.4															
Privas, Normal School	28.91	734.2	29.98	761.4	54.1	12.3	74	S			1		1	S	S	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.06	636.4			46.0	7.8	75	SE			2		5			0	0		Allnard, Director.
Rochefort, Naval Obs'y	29.80	756.8	29.83	757.6	61.2	16.2	67	E			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.84	757.9	29.93	760.1	61.5	16.4	53	SE			2		8		SE	0	0	Very cloudy	F. Lucard, Director.
Saint Malo (Port)			29.90	759.5	55.2	12.9	74	SE			2		8		SE	0	0	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.76	755.8	29.92	760.0	58.8	14.9	54	ESE			1		5		ESE	0	0		E. Renou.
Tarbes, Normal School	28.74	729.9	29.80	756.8	64.4	18	80	SW			2		2	SSW	SW	0	0	Slightly cl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.19	741.3	29.91	759.8	51.4	10.8	81	N			1		5		NW	0	0	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0	0		L'Abbé Marchési.
Lyons, Observatory			30.09	764.2									7			0	0		
Marseilles, Observatory			29.90	759.5	71.8	22.1	52	S			1		6			0	0	Very cloudy	The Staff.
Mont-Louis	24.76	628.9	30.08	763.9	55.4	13.0	25	SW			3		1		SE	0	0		M. Cave.
Nice			29.97	761.1	65.5	18.6	78	E			2		8			0.087	2.2		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.63	752.7	29.91	759.7	56.8	13.8	67	E			3		10		ESE	0	0		Marié Davy, Director
Perpignan			29.89	759.2	65.3	18.5	80	E	11.2	5.00			1		NE	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.46	570.4			51.8	11.0		SW			4		3			0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.15	740.5	29.87	758.8	68.0	20.0	48	SSE			4		1			0	0		The Staff.
Tours																			C. Marquet.
Versailles			29.92	759.9	56.8	13.8	55	SE			2		9			0	0	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.5	30.20	767.1	58.7	13.7	100	N	2.7	1.2		5ck				0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0.50, instead of 0.55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.09	738.8	29.93	760.2	53.8	12.1	88	Calm					10			0.08	2.	Raining	Prof. Dr. Hoh.
Berlin	29.99	761.7	30.16	766.1	52.0	11.1	70	E			2		10			0	0		Prof. Arndt.
Breslau	29.61	752.2	30.15	765.7	49.1	9.5	96	ENE			2		10			0.077	1.96	Raining	Royal University Obs'y
Carlsruhe	29.53	750.0	29.96	760.9	51.1	10.6	97	N			1		10			0.028	0.7	Light rain	Albert Senz.
Cassel	29.41	747.0	30.02	762.4	51.4	10.8	81	ENE			2		10	E		0.209	5.30		Dr. H. Möhl.
Crefeld	29.82	757.5	29.98	761.6	54.5	12.5	74	E			4		9			0	0		Director Lose.
Emden	30.18	766.5	30.21	767.4	54.5	12.5	71	E			2		5			0	0		Prof. Prestel.
Frankfort on the Main	29.62	752.3	29.98	761.6	51.4	10.8		NNE			2		10			0.008	0.2		Physical Society.
Friedrichshafen	28.52	724.3	29.94	760.4	57.2	14.0	76	SW			2		1	W		0	0		M. Wilhelm.
Hamburg	30.10	764.6	30.17	766.4	54.3	12.4	72	ENE			5		0			0	0		Captain F. Hegemann.
Kiel	30.19	766.9	30.21	767.3	55.6	13.1	71	E			3		2			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.23	767.9	30.32	770.1	47.8	8.8	85	E			2		8			0.004	0.1		Prof. E Luther.
Köslin			30.23	767.9	54.1	12.3		E			4		2			0	0		H. Müller.
Leipsic, Observatory	29.65	753.2	30.08	764.1	47.8	8.8	100	E			5		10	ENE				Raining	Prof. Bruhns.
Memel, Naval School	30.33	770.3	30.37	771.5	50.5	10.3	78	E			2		1ks			0	0		Reinbrecht and Skalweit.
Neufahrwasser	30.29	769.3	30.30	769 7	51.1	10.6	83	NE			3		10			0	0		A. Lothes.
Posen	29.93	760.3	30.23	767.8	49.6	9.8	75	N			6		10			0.028	0.7		Dr. Magener.
Strassburg (in Alsace)	29.43	747.5	29.98	761.4	56.8	13.8	86	S			1		10	N		0.070	1.77		Astronomical Observatory.
Stuttgart	28.98	736 0	29.92	759.9	54.0	12.2	84	NW			1		10			0	0		Prof. Schoder.
Treves, (Trier)	29.42	747.3	29.95	760.7	52.7	11.5	79	NE			6		10			0.002	0.04	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.42	721.9	29.91	759.6	52.5	11.4	98	E	1.6	0.7			10			0.126	3.2	Rain and fog	Dr. Von Bebber.
Wustrow, Naval School	30.23	767.8	30.25	768.4	55.9	13.3	62	E			3		2k			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.78	756.4	30.16	766.1	75.4	24.1		SW			1.5		Sm'e					Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.37	746.0	29.84	757.9	90.7	32.6	37	NNW					1	S		0	0	D. clouds	
Bombay	29.72	754.9	29.76	755.8	84.1	28.9	83	NNW	18	8.0			10		W	0	0	Overcast	
Poona	27.86	707.5	29.84	758.0	82.9	28.3	47	NNE					9		NNE	0	0	D. clouds	
Lahore	29.06	738.0	29.79	756.6	88.1	31.2	42	Calm	1	0.4						0	0	Blue sky	
Belgaum	27.26	692.4	29.78	756.5	78.1	25.6	78	W	4	1.8			9	E		0	0	D. clouds	
Roorkee	28.89	733.9	29.79	756.6	82.8	28.2	60	Calm	1	0.4						0	0		
Agra	29.23	742.5	29.79	756.6	90.2	32.3	43	N								0	0		
Nagpur	28.70	728.9	29.73	755.1	86.6	29.8	62	NE	4.8	2.2			5		E	0	0	D. clouds	
Lucknow	29.41	747.1	29.78	756.5	84.8	29.3	59	Calm	0.9	0.4						0	0	Blue sky	
Allahabad	29.44	747.8	29.75	755.6	83.2	28.4	66	Calm	2	0.9			5			0	0	D. clouds	
Patna	29.59	751.6	29.77	756.2	86.8	29.9	74	Calm	0.5	0.2			4	NW	NW	0	0	D. clouds	
Hazaribagh	27.77	705.4	29.79	756.6	75.8	24.3	87	N	5.3	2.4			8			0.47	11.9	Thunder-storm	
Cuttack	29.69	754.1	29.77	756.2	84.5	29.2	68	SE	2.8	1.2			2			0.09	2.3	D. clouds	
Calcutta (Alipore)	29.78	756.5	29.81	757.1	81.2	27.3	87	SW	1.0	0.4			8			0	0	D clouds	
Goalpara	29.40	746.8	29.79	756.7	81.7	27.6	88	Calm	3.3	1.5			1			0	0	D. clouds	
Chittagong	29.75	755.7	29.84	758.0	79.9	26.6	91	Calm	2.2	1.0			10			0	0	Overcast	
Sibsagar	29.44	747.6	29.77	756.1	82.6	28.2	76	NE	1.3	0.6			10	ENE	ENE	0	0	D. clouds	
Jubbulpore	28.46	723.0	29.82	757.4	84.8	29.3	62	ENE	2.1	0.9			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 666.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.58	751.4	29.99	761.8	57.9	14.4	82	N	0.7	0.3	.....	.....	10	.....	.....	0.929	23.6	.....	Prof. Giovanni Clodig.
Padua	29.87	758.7	29.98	761.5	62.8	17.1	72	WNW	4.5	2.2	.....	.....	9	W	.....	0.091	2.3	.....	Prof. Dott. Lorenzoni
Vicenza	29.80	757.0	29.99	761.8	58.6	14.8	90	NW	0	0	.....	.....	9	E	.....	0.492	12.5	.....	Cont. Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.45	747.9	29.96	760.9	64.2	17.9	71	SW	.....	.....	2	.....	6	NW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.09	738.8	29.99	761.8	60.1	15.6	78	NNW	1.3	0.6	.....	.....	6	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.07	713.0	29.97	761.3	55.8	13.2	78	NNW	.....	.....	2	.....	2	NW	.....	0.094	2.4	.....	Prof. D. C. Bruno.
Porto Maurizio	29.75	755.6	29.97	761.2	63.7	17.6	70	E	.....	.....	4	.....	9	NW	.....	0.280	7.1	.....	Prof. L. Vassallo.
Genoa	29.82	757.4	29.98	761.6	59.9	15.6	86	NE	1.3	0.6	.....	.....	10	SE	.....	0.732	18.6	.....	Prof. G. M. Garibaldi.
Parma	29.68	753.9	30.00	761.9	61.5	16.4	71	NNW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.76	756.0	30.02	762.4	61.3	16.3	82	NNW	.....	.....	2	.....	10	SW	.....	0.291	7.4	.....	Cav. F. Meucci
Leghorn	29.87	758.8	29.96	761.0	68.8	14.9	89	E	3.9	1.7	.....	.....	10	SW	.....	0.417	10.6	.....	Prof. P. Monte.
Pesaro	29.97	761.1	30.01	762.3	63.3	17.4	82	SW	4.3	1.9	.....	.....	10	.....	.....	0.236	6.0	.....	Prof. Luigi Guidi.
Urbino	28.49	723.2	30.04	762.9	58.3	14.6	66	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.83	757.6	30.00	762.0	70.7	21.5	64	S	8.1	3.6	.....	.....	10	.....	.....	0.087	2.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.83	757.7	30.03	762.7	74.8	23.8	53	SW	.....	.....	2	.....	7	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.78	756.4	30.03	762.8	72.5	22.5	78	S	12.5	5.6	.....	.....	7	S	.....	0.224	5.7	.....	Prof. C. De Giorgi.
Cagliari	29.72	754.8	29.91	759.6	74.1	23.4	73	SE	.....	.....	2	.....	4	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.15	740.5	30.02	762.5	77.7	25.4	73	SE	0	0	.....	.....	3	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.74	755.4	29.99	761.8	75.9	24.4	68	E	2.5	1.1	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.97	761.3	30.04	763.1	74.3	23.5	90	SW	2.5	1.1	.....	.....	10	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 879.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.87	758.7	30.07	763.8	63.6	17.9	73	ENE	3.9	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	30.00	762.0	30.07	763.8	55.2	12.9	91	NNW	4.9	2.2	.....	.....	10s	.....	.....	0.095	1.41	Cloudy	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	64.3	17.9	70	N	.....	.....	2	0	0	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.07	636.7	30.04	762.8	57.2	14.0	73	NW	.....	.....	1	8	.....	NW	.....	0	0	Cloudy	Prof. L. Perer.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.42	620.4	29.95	760.9	64.4	18.0	83	S	.....	.....	1	1c	1s	.....	.....	0	0	Clear	Prof. M. Leal.
Mexico	23.14	587.6	30.10	766.0	53.6	12.0	87	Calm	0	0	.....	0	7k	.....	NE	0	0	Cloudy	Central Observatory. M. V. de Leon, M. E
Pabellon, (Aguascalts)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Puebla	.....	.....	.....	.....	59.5	15.3	78	WSW	.....	.....	1	4c	0	.....	.....	Inap.	Inap.	Clear	M, M. Cházaro.
Tlacotalpam	29.91	759.7	29.92	760.0	77.9	25.5	93	SE	.....	.....	1	0	2	.....	SE	Inap.	Inap.	Clear	G. Barroeta, M. D.
San Luis Potosi	24.24	615.6	30.22	767.8	55	12.8	19	ESE	.....	.....	.....	0	1	.....	ESE	0	0	Misty	Prof. J. Rossell.
Vera-Cruz	29.97	761.3	30.00	762.0	78.8	26.0	84	NW	.....	.....	.....	0	2k	.....	.....	0	0	Clear	J. A. Bonilla, M. E.
Zacatecas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. Spina.
Puebla, (Catholic Institute)	23.32	592.3	30.08	764.1	54.1	12.3	83	N	2.7	1.2	.....	0	1	.....	Calm	0	0	Clear	M. V. de Leon, C. E.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. Banda, C. E.
Colima	28.34	719.9	29.96	761.0	79.0	26.1	73	NE	.....	.....	1	0	6	.....	.....	0.350	8.9	½ cloudy	Antonio Guerra y Guerra.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.00	762.1	30.00	762.1	56.8	13.8	.....	E	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.07	763.8	30.13	765.2	50.7	10.4	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Helder	30.07	763.6	30.07	763.6	52.3	11.3	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.99	761.8	29.99	761.8	55.8	13.2	75	ENE	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.99	761.7	30.04	762.9	53.8	12.1	79	E	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	H. v d Broek

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.23	767.7	30.28	769.1	55.4	13.0	66	S	7.2	3.2	.....	.....	0	.....	.....	0	0	.....	
Brönö	30.24	768.2	30.28	769.2	56.1	13.4	48	SSE	7	3	.....	.....	8	.....	.....	0	0	.....	
Christiania	30.23	767.7	30.37	771.5	49.6	9.8	83	N	2	1	.....	.....	10	.....	.....	0	0	.....	
Tromsö	30.07	763.8	30.11	764.9	43.5	6.4	88	SW	4	2	.....	.....	8	.....	.....	0.047	1.2	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.09	764.3	30.28	769.1	63.7	17.6	68	NNW	2.5	1.1	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.86	733.1	29.89	759.2	60.8	16.0	59	SW	11.2	5.0	.....	.....	8	.....	.....	0.071	1.8	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.00	761.9	30.08	764.1	72.7	22.6	41	WSW	3.8	1.7	.....	.....	2	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.67	751.1	29.93	760.2	55.6	13.1	79	N	18.6	8.3	.....	.....	9	.....	.....	0.421	10.7	.....	The Staff.
Ponta Delgada, (Azores)	30.20	767.1	30.27	768.9	67.6	19.8	51	NNE	8.7	3.9	.....	.....	5	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—																	
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira, S. 8° 48′, E. 13° 08′	.....	.....	29.98	761.5	80.6	27.0	.....	W	.....	.....	3	.....	9	.....	W	1	.....	D. clouds	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	30.02	762.4	81.5	27.5	.....	ENE	.....	.....	3	.....	6	.....	ENE	1	.....	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.78	756.4	30.21	767.3	49.5	9.7	89	E	9	4	.....	.....	10n	.....	.....	.....	.....	Raining	Astronomical Obs.
Wilna	29.92	760.0	30.35	770.8	57.0	13.9	70	E	2	1	.....	.....	1	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	30.21	767.3	30.46	773.6	54.5	12.5	77	SW	2	1	.....	.....	1k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.36	771.1	30.37	771.5	49.1	9.5	89	W	16	7	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.63	752.6	30.26	768.5	64.2	17.9	37	SE	7	3	.....	.....	7c;ck	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.24	768.0	30.31	769.8	71.2	21.8	45	SSE	4	2	.....	.....	3s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.31	769.9	30.33	770.4	66.4	19.1	70	ENE	9	4	.....	.....	4	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.91	759.8	30.47	773.9	54.7	12.6	67	S	9	4	.....	.....	2ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.18	766.5	30.38	771.7	62.6	17.0	52	NE	4	2	.....	.....	5	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	29.93	760.2	29.95	760.7	46.2	7.9	89	W	22	10	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.93	734.9	30.34	770.6	65.7	18.7	54	SE	4	2	.....	.....	1k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.41	772.5	30.33	770.4	66.0	18.9	42	N	2	1	.....	.....	9s;ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.77	756.1	30.24	768.2	52.2	11.2	83	WNW	0	0	.....	.....	9ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.98	761.5	30.26	768.5	52.9	11.6	75	W	4	2	.....	.....	7	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	29.11	739.5	30.08	764.1	47.3	8.5	69	W	11	5	.....	.....	8ck	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	763.1	30.28	769.0	57.6	14.2	52	NNW	4	2	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	28.65	727.6	30.35	770.9	59.9	15.5	86	Calm	0	0	.....	.....	9	.....	.....	.....	.....	Heavy clouds	Teich, A. M.
Barnaul	29.68	753.8	30.21	767.4	41.9	5.5	45	S	4	2	.....	.....	10	.....	.....	.....	.....	Snowing	Meteorological Obs.
Yeniseisk	29.43	747.5	29.78	755.1	31.6	— 0.2	99	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	29.97	761.2	30.11	764.8	55.4	13.0	91	Calm	0	0	.....	.....	5ks	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	30.11	764.8	30.20	767.0	30.2	— 1.0	80	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.6 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.76	756.0	29.87	758.7	70.3	21.3	73	ESE	1.9	0.86	.....	.....	.....	.....	.....	0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.70	754.4	29.76	755.8	76.8	24.9	49	SE	2.4	1.06	.....	.....	.....	.....	.....	0	0	Clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.86	682.2	.....	.....	67.3	19.6	68	S	4.4	1.95	.....	.....	.....	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.63	701.7	29.80	756.8	66.2	19.0	52	S	12.0	5.34	.....	0	8	.....	.....	0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.68	753.8	29.82	757.5	75.2	24.0	55	NW	1.6	0.72	.....	4	4	S	.....	0	0	Rainy	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.82	731.9	29.71	754.6	54.3	12.4	92	NW	18.6	8.33	.....	.....	10	.....	.....	0.610	15.5	.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.5	30.05	763.2	74.8	23.8	83	ESE	6.7	3.0	.....	0	1k	.....	.....	0.882	22.4	Clear	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.84	758.0	29.94	760.5	61.2	16.2	89	E	5.4	2.4	.....	0	10	.....	S	0.280	5.8	Raining	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.82	757.4	29.91	759.7	81.0	27.2	88	SW	0	0	.....	2s	0	SE	.....	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r.

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.13	765.3	30.17	766.3	52.5	11.4	.....	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	
Umea	30.21	767.3	30.26	768.6	54.7	12.6	59	NW	.....	.....	2	.....	8	.....	.....	0	0	.....	
Hernosand	30.29	769.4	30.34	770.7	59.7	15.4	62	Calm	.....	.....	0	.....	4	.....	.....	0	0	.....	
Stockholm	30.21	767.4	30.39	771.9	48.7	9.3	82	WSW	.....	.....	2	.....	10	.....	.....	0.004	0.1	Foggy	
Wisby	30.27	768.9	30.33	770.4	51.8	11.0	87	NW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.30	769.5	30.37	771.4	46.6	8.1	91	WSW	.....	.....	.....	.....	10	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	724.9	29.96	761.0	55.4	13.0	67	NNE	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.33	719.6	30.04	762.9	57.2	14.0	73	W	.....	.....	1	.....	3	.....	.....	0	0	Bright	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.3 mm.; Thermometer, +0.1 cent.; Relative Humidity, —5 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.18	766.5	68.7	20.4	72	SE	2	1.0	.....	.....	6	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.2	71.8	22.1	.....	SW	.....	.....	8	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.11	764.8	82.9	28.3	42	NNE	.....	.....	8	.....	1c	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.93	760.2	30.00	762.0	45.8	7.7	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.61	752.1	29.90	759.4	60	15.6	.....	SE	8	1.8	.....	.....	8s	.....	SE	0	0	Cloudy	W. R. Bigg.
*Chatham, N B	29.98	761.5	30.05	763.3	40	4.4	89	SW	1	0.4	.....	5ck	0	SW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island.	30.04	763.0	30.08	764.0	49	9.4	87	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.68	753.9	29.87	758.7	62.9	17.2	61	W	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.87	758.7	30.03	762.7	39.3	4.1	95	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	29.90	759.4	29.94	760.5	35.1	1.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	29.84	757.9	29.86	758.4	48	8.9	78	SW	15	6.7	.....	2k	8s	Calm	W	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.04	763.0	30.10	764.5	38.6	3.7	93	Calm	0	0	.....	.....	Fog	.....	.....	0.02	0.5	Foggy	Prof. Harrison.
*Fort Garry Manitoba	29.07	738.4	29.02	760.0	34	1.1	89	E	7	3.1	.....	.....	10n	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	28.80	731.5	29.88	758.9	58	14.4	.....	S	.....	.....	1	3cs	0	N	.....	Inap.	Inap.	Fair	James Grant.
*Halifax, N. S	29.97	761.2	30.10	764.5	46	7.8	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	F. Allison, M. A.
Hamilton, Ontario	29.63	750.0	29.89	759.2	62.5	16.9	83	SW	.....	.....	3	0	0	.....	.....	0.09	2.3	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.93	760.2	29.96	760.7	46	7.8	69	NW	.....	.....	3	1c	2ks	.....	.....	0	0	Fine	E. Weedon.
*Kingston, Ontario	29.66	750.8	29.89	759.2	60	15.6	86	S	10	4.5	.....	.....	10n	.....	S	0.01	0.3	Light rain	S. Woods, M. A.
Little Glace Bay, N. S	30.05	763.3	30.09	764.3	48.4	9.1	75	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.71	754.6	29.90	759.4	58	14.4	72	W	17	7.6	.....	8k	2ks	W	Calm	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.12	739.6	29.80	756.9	58	14.4	97	S	5	2.2	.....	0	0	.....	.....	0.67	17.0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.11	739.4	29.84	757.9	60.7	15.9	88	SW	.....	.....	1	3ck	1d	.....	.....	0.20	5.1	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.24	742.7	29.92	760.0	60	15.6	94	SW	5	2.2	.....	5k	0	SW	.....	0.52	13.2	Fair	H. Morgan.
Port Hastings, N. S	30.03	762.7	30.08	764.0	58.7	12.1	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.28	743.7	29.91	759.7	62	16.7	88	S	9	4.0	.....	5k	2ks	W	W	0.22	5.6	Clearing	M. Payne.
*Quebec, Quebec	29.62	752.3	29.94	760.5	50	10.0	75	Calm	.....	.....	0	Haze	Fog	.....	.....	0	0	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.36	745.7	29.81	757.2	56	13.3	98	NW	3	1.3	.....	.....	8s	.....	W	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.04	763.0	30.09	764.3	48	8.9	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
St. John, N. B	29.97	761.2	30.14	765.5	49	9.4	93	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
*Saugeen, Ontario	29.21	741.9	29.90	759.4	60	15.6	93	S	14	6.3	.....	8k	0	W	.....	0.79	20.1	Cloudy	K. Stewart.
Stayner, Ontario	29.06	738.1	29.81	757.2	63	17.2	85	SW	8	3.6	.....	0	0	.....	.....	0.19	4.8	Clear	R. J. Cole.
Stratford, Ontario	28.60	726.4	29.85	758.2	58.5	14.7	97	SW	12.0	5.4	.....	3ck	3s	NW	.....	0.647	13.90	Fair	C. J. MacGregor, M.
*Sydney, C. B	30.08	764.0	30.11	764.8	44	6.7	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.48	748.8	29.86	758.4	57	13.9	93	SW	8	3.6	.....	0	0	.....	.....	0.30	7.6	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	29.86	758.4	30.03	762 7	42	5.6	83	NE	.....	.....	.....	2c	2s	.....	.....	Inap.	Inap.	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.85	758.2	30.07	763.8	57	13.9	69	S	5	2.2	.....	2c	8s	W	W	0	0	Cloudy	
Alpena, Michigan	29.19	741.4	29.82	757.4	57	13.9	93	NW	10	4.5	.....	.....	10s	.....	Calm	0.41	10.4	Cloudy	
Atlanta, Georgia	29.06	738.1	30.20	767.1	59	15.0	76	SE	6	2.7	.....	0	2ks	.....	W	0	0	Fair	
Atlantic City, New Jersey	30.18	766.6	30.19	766.8	64	17.8	78	S	12	5.4	.....	8c	0	W	.....	0	0	Fair	
Augusta, Georgia	30.10	764.5	30.29	769.4	55	12.8	87	Calm	0	0	.....	Haze	Fog	.....	Calm	0	0	Foggy	
Baltimore, Maryland	30.13	765.3	30.18	766.6	56	13.3	75	S	3	1.3	.....	5c	Fog	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.17	766.3	30.19	766.8	65	18.3	78	SW	12	5.4	.....	8c	Haze	NW	Calm	0	0	Fair	
Bismarck, Dakota	27.77	705.4	29.63	752.6	43	6.1	83	E	20	8.9	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Boerne, Texas	28.46	722.9	.....	.....	74	23.3	95	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Boise City, Idaho	26.95	684.5	29.01	759.7	39	3.9	81	N	8	3.6	.....	.....	10s	.....	W	0.15	3.8	Threatening	
Boston, Massachusetts	29.98	761.5	30.13	765.3	59.5	15.3	76	SW	8	3.6	.....	5c	Haze	NW	Calm	0	0	Fair	
Brackettville, Texas	28.92	734.6	29.70	754.4	78	25.6	73	SE	10	4.5	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.71	729.2	29.71	754.6	39	3.9	91	E	12	5.4	.....	5cs	0	SW	.....	0.06	1.5	Fair	
Brownsville, Texas	29.87	758.7	29.93	760.2	77	25.0	82	SE	10	4.5	.....	0	2s	.....	Calm	0	0	Clear	
Buffalo, New York	29.21	741.9	29.89	759.2	62	16.7	77	S	13	5.8	.....	2ck	8s	SW	SW	0.05	1.3	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	63	17.2	8	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.75	755.6	30.01	762.2	59	15.0	65	S	12	5.4	.....	.....	10s	.....	W	0	0	Cloudy	
Cairo, Illinois	29.59	751.6	29.97	761.2	66	18.9	72	S	9	4.0	.....	2ck	2s	W	Calm	0	0	Fair	
Camp Apache, Arizona	.....	.....	.....	.....	49	9.4	43	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.09	637.3	29.89	759.2	52	11.1	47	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.56	674.6	30.05	763.3	61	16.1	40	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camro, California	27.36	694.9	29.93	760.2	47	8.3	100	SW	12	5.4	.....	.....	10n	.....	SW	0.20	5.1	Light rain	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	62	16.7	83	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.21	767.3	30.24	768.1	58	14.4	70	SW	12	5.4	.....	5cs	0	NW	.....	0	0	Fair	
Cape Lookout, N. Carolina	30.25	768.3	30.26	768.6	61	16.1	82	E	6	2.7	.....	0	Haze	.....	E	0	0	Hazy	
Cape May, New Jersey	30.18	766.6	30.20	767.1	62	16.7	77	S	20	8.9	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.11	739.4	29.78	756.4	75	23.9	86	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.24	768.1	30.31	769.9	65	18.3	73	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.44	595.4	29.38	746.2	49	9.4	37	NW	16	7.2	.....	0	8s	.....	NW	0	0	Cloudy	
Chicago, Illinois	29.15	740.4	29.81	757.2	65	18.3	84	SW	8	1.3	.....	5cs	Haze	Calm	Calm	0	0	Fair	
Cincinnati, Ohio	29.42	747.3	30.06	763.5	65	18.3	68	S	5	2.2	.....	4ck	1ks	W	SW	Inap.	Inap.	Fair	
Cleveland, Ohio	29.25	742.9	29.95	760.7	64	17.8	63	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.02	711.7	29.59	751.6	73	22.8	81	S	16	7.2	.....	0	5ks	.....	S	0	0	Fair	
Columbus, Ohio	29.19	741.4	30.01	762.2	62	16.7	77	S	6	2.7	.....	10k	0	SW	.....	0.01	0.3	Cloudy	
Conchо, Texas	27.89	708.4	29.47	748.5	75	23.9	72	S	28	12.5	.....	0	10s	.....	S	0	0	Cloudy	
Corsicana, Texas	29.44	747.8	29.89	759.2	74	23.3	86	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	29.21	741.9	29.83	757.7	59	15.0	88	Calm	0	0	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Decatur, Texas	28.77	730.7	29.88	758.9	73	22.8	85	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Denison, Texas	29.06	738.1	29.82	757.4	73	22.8	81	S	16	7.2	.....	5k	0	SW	.....	0	0	Fair	
Denver, Colorado	24.21	614.9	29.43	747.5	59	15.0	13	SW	20	8.9	.....	0	2s	.....	SW	0	0	Clear	
Des Moines, Iowa	28.81	731.8	29.66	753.4	59	15.0	94	S	16	7.2	.....	.....	10n	.....	S	0.19	4.8	Light rain	
Detroit, Michigan	29.20	741.7	29.84	757.9	65	18.3	78	SW	8	3.6	.....	0	0	.....	.....	0.08	2.0	Clear	
Dodge City, Kansas	26.94	684.3	29.06	738.1	67	19.4	74	S	24	10.7	.....	0	0	.....	.....	0.02	0.5	Clear	
Dubuque, Iowa	29.13	739.9	29.80	756.9	60	15.6	94	S	1	0.4	.....	.....	10n	.....	Calm	0.18	3.8	Light rain	
Duluth, Minnesota	29.24	742.7	29.92	760.0	43	6.1	75	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Eagle Pass, Texas	29.07	738.4	29.77	756.1	77	25.0	82	SE	4	1.8	.....	.....	10s	.....	SE	0	0	Cloudy	
Eastport, Maine	30.01	762.2	30.08	764.0	51	10.6	86	S	7	3.1	.....	0	Haze	.....	Calm	0	0	Clear	
Edinburg, Texas	.....	.....	.....	.....	77	25.0	80	SE	.....	.....	4	.....	10s	.....	SE	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	70	21.1	35	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.24	742.7	29.93	760.2	63	17.2	78	S	12	5.4	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Escanaba, Michigan	29.26	743.2	29.91	759.7	49	9.4	71	N	24	10.7	.....	.....	10s	.....	N	0.08	2.0	Cloudy	
Florence, Arizona	28.36	720.3	29.96	761.0	56	13.3	63	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.32	643.1	29.38	746.2	53	11.7	35	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.10	637.5	30.06	763.5	66	18.9	52	SW	3	1.3	.....	2k	0	W	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.28	743.7	29.79	756.7	71	21.7	80	S	12	5.4	.....	0	2ks	.....	S	0	0	Clear	
Fort Griffin, Texas	28.52	724.4	29.71	754.6	77	25.0	69	S	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Fort McKavett, Texas	27.62	701.5	29.43	747.5	75	23.9	77	SW	14	6.3	.....	.....	10s	.....	SW	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.53	724.6	29.57	751.1	75	23.9	72	S	16	7.2	.....	0	8s	.....	S	0	0	Cloudy	
Fredericksburg, Texas	28.14	714.7	29.63	752.6	73	22.8	85	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.95	760.7	29.99	761.7	78	25.6	86	S	9	4.0	.....	2k	0	S	.....	0	0	Clear	
Graham, Texas	28.71	729.2	29.70	754.4	75	23.9	77	S	12	5.4	.....	0	8ks	.....	SW	0	0	Cloudy	
Grand Haven, Michigan	29.19	741.4	29.82	757.4	61	16.1	88	NW	1	0.4	.....	.....	10s	.....	Calm	0.14	3.6	Cloudy	
Indianapolis, Indiana	29.19	741.4	29.94	760.5	66	18.9	79	S	6	2.7	.....	8k	0	SW	.....	0	0	Fair	
Indianola, Texas	29.04	760.5	29.97	761.2	79	26.1	66	S	12	5.4	.....	1k	0	S	.....	0	0	Clear	
Jacksboro, Texas	28.67	728.2	29.74	755.4	74	23.3	81	S	12	5.4	.....	.....	10n	.....	S	0	0	Cloudy	
Jacksonville, Florida	30.19	766.8	30.22	767.6	68	20.0	84	N	3	1.3	.....	5k	0	E	.....	0	0	Fair	
Keokuk, Iowa	29.15	740.4	29.73	755.1	67	19.4	84	S	6	2.7	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
Key West, Florida	30.04	763.0	30.08	764.0	77	25.0	73	NE	14	6.3	.....	6k	ck	0	NE	.....	0	0	Fair
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	60	15.6	94	W	5	2.2	.....	2c	0	W	.....	0	0	Fair	
Knoxville, Tennessee	29.24	742.7	30.27	768.8	51	10.6	93	Calm	0	0	.....	9ck	Fog	SW	E	0	0	Cloudy	
La Crosse, Wisconsin	29.08	738.6	29.80	756.9	53	11.7	93	N	4	1.8	.....	.....	10s	.....	E	Inap.	Inap.	Cloudy	
La Mesilla, New Mexico	25.93	658.6	30.08	764.0	50	10.0	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.42	747.3	29.74	755.4	79	26.1	87	SE	12	5.4	.....	10k	0	S	.....	0	0	Cloudy	
Lead City, Dakota	24.23	615.4	29.50	749.3	45	7.2	61	SW	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	28.80	731.5	29.60	751.8	68	20.0	74	S	8	3.6	.....	2ck	2ks	SW	SW	0	0	Fair	
Los Angeles, California	29.57	751.1	29.91	759.7	56	13.3	94	E	10	4.5	.....	.....	10s	.....	SW	0.13	3.3	Cloudy	
Louisville, Kentucky	29.50	749.3	30.05	763.3	64	17.8	73	S	6	2.7	.....	.....	10s	.....	SW	Inap.	Inap.	Threatening	
Lynchburg, Virginia	29.52	749.8	30.22	767.6	50	10.0	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.85	732.8	29.80	756.9	60	15.6	88	NE	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Marquette, Michigan	29.21	741.9	29.91	759.7	50	10.0	72	N	8	3.6	.....	5k	0	N	.....	0.18	4.6	Fair	
Mason, Texas	28.23	717.0	29.90	759.4	75	23.9	76	SE	16	7.2	.....	.....	10s	.....	SE	0	0	Cloudy	
Memphis, Tennessee	29.12	739.6	29.84	757.9	55	12.8	87	NE	20	8.9	.....	.....	10s	.....	NE	0.10	2.5	Cloudy	
Milwaukee, Wisconsin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mobile, Alabama	30.12	765.0	30.16	766.1	69	20.6	90	SE	4	1.8	.....	0	2s	.....	W	0	0	Fair	
Montgomery, Alabama	29.98	761.5	30.21	767.3	68	17.2	78	SE	8	3.6	.....	0	5s	.....	SE	0	0	Fair	
Morgantown, West Virginia	29.08	738.6	30.12	765.0	59	15.0	76	S	6	2.7	.....	3cks	0	SSW	.....	0	0	Fair	
Mt. Washington, N. H.	23.89	606.8	30.25	768.3	43	6.1	83	NW	37	16.5	.....	2c	2s	Calm	Calm	0	0	Clear	
Nashville, Tennessee	29.61	752.1	30.14	765.5	59	15.0	82	SE	1	0.4	.....	8c	0	W	.....	0	0	Fair	
New Haven, Connecticut	30.06	763.5	30.18	766.6	61	16.1	85	SW	4	1.8	.....	5c	Haze	Calm	Calm	0	0	Fair	
New London, Connecticut	30.14	765.5	30.19	766.8	62	16.7	83	SW	8	3.6	.....	2cs	1s	W	W	0	0	Fair	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	74	23.3	81	SE	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	30.13	765.3	30.18	766.6	60	15.6	82	SW	5	2.2	.....	7c	0	SW	.....	0	0	Fair	
New York, New York	30.01	762.2	30.19	766.8	57	13.9	87	SW	4	1.8	.....	8cs	Haze	SW	Calm	0	0	Fair	
Norfolk, Virginia	30.20	767.1	30.26	768.6	56	13.3	87	S	6	2.7	.....	5c	Haze	Calm	.....	0	0	Fair	
North Platte, Nebraska	26.49	672.8	28.95	735.3	45	7.2	84	SE	20	8.9	.....	5c	Sm'e	S	Calm	0	0	Fair	
Olympia, Washington Ter.	29.80	756.9	29.84	757.9	40	4.4	91	S	7	3.1	.....	0	0	.....	.....	0.35	8.9	Clear	
Omaha, Nebraska	28.48	723.4	29.50	749.3	58	14.4	94	SE	12	5.4	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature, Inches.	Barometer. Correcte for instrum'tal error and temperature, Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.66	753.4	29.97	761.2	62	16.7	61	S	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Pembina, Dakota	29.00	736.6	29.84	757.9	36	2.2	90	E	8	3.6	.....	.....	10s	.....	E	0	0	Cloudy	
Philadelphia, Pa	30.14	765.5	30.19	766.8	58	14.4	82	SW	9	4.0	.....	5ck	Fog	NW	Calm	0	0	Fair	
Phœnix, Arizona	28.68	728.5	.....	.....	61	16.1	50	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.46	443.1	29.07	738.6	15	— 9.4	65	SW	48	21.5	.....	0	2s	.....	SW	0	0	Clear	
Pioche, Nevada	23.77	603.8	29.54	750 3	34	1.1	90	N	4	1.8	.....	2c	0	SW	.....	0.35	8.9	Fair	
Pittsburg, Pennsylvania	29.25	742.9	30.04	763.0	61	16.1	66	SW	7	3.1	.....	5k	0s	SW	SW	0	0	Cloudy	
Port Huron, Michigan	29.20	741.7	29.84	757.9	63	17.2	83	S	14	6.3	.....	2ck	5ks	W	Calm	0.54	6.1	Fair	
Portland, Maine	30.05	763.3	30.10	764.5	50	10.0	86	SW	9	4.0	.....	1c	Haze	Calm	.....	0	0	Clear	
Portland, Oregon	29.86	758.4	29.97	761.2	42	5.6	91	SE	5	2.2	.....	5c	0	W	.....	0.91	23.1	Fair	
Prescott, Arizona	24.57	624.1	29.93	760.2	48	8.9	29	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.21	741.9	30.02	762.5	68	20.0	90	N	14	6.3	.....	Haze	Haze	.....	.....	0	0	Hazy	
Punta Rassa, Florida	30.14	765.5	30.15	765.8	69	20.6	75	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.61	752.1	29.98	761.5	48.6	9.2	96	S	2	0.9	.....	.....	Fog	.....	Calm	1.07	27.2	Foggy	
Rio Grande City, Texas	29.71	754.6	29.92	760.0	78	25.6	82	SE	.....	.....	4	.....	10s	.....	SE	0	0	Cloudy	
Rochester, New York	29.32	744.7	29.81	759.7	63	17.2	72	SW	7	3.1	.....	.....	10n	.....	NW	Inap	Inap.	Light rain	
Roseburg, Oregon	29.46	748.3	30.04	763.0	37	2.8	95	Calm	0	0	.....	10ck	0	NW	.....	0.28	7.1	Cloudy	
Sacramento, California	29.90	759.4	29.98	761.5	48	6.1	100	N	4	1.8	.....	0	Fog	.....	Calm	0.48	12.2	Foggy	
St. Louis, Missouri	29.82	744.7	29.88	758 9	67	19.4	79	S	12	5.4	.....	0	5ks	.....	SW	Inap.	Inap.	Fair	
St. Marks, Florida	30.19	766.8	30.21	767.3	61	16.1	94	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.94	735 1	29.75	755.6	47	8.3	77	SE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Salt Lake City, Utah	25.26	641.6	29.59	751.8	39.0	3.9	82	NW	12	5.4	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
San Antonio, Texas	29.21	741.9	29.76	755.9	76	24.4	91	SE	6	2.7	.....	.....	10ks	.....	SE	0	0	Cloudy	
San Diego, California	29.91	759.7	29.99	761.7	59	15.0	94	SW	6	2.7	.....	.....	10n	.....	Calm	0.06	1 5	Light rain	
Sandusky, Ohio	29.26	743.2	29.91	759.7	63	17.2	72	SW	20	8.9	.....	1cs	0	W	.....	0	0	Clear	
Sandy Hook, New Jersey	30.14	765.5	30.18	766.6	60	15.6	82	SW	12	5.4	.....	8cs	0	W	.....	0	0	Cloudy	
San Francisco, California	29.94	760.5	30.00	762.0	53	11.7	73	W	3	1.3	.....	5c	0	W	.....	1.19	30.2	Fair	
Santa Fé, New Mexico	23.06	585.7	29.60	751.8	48	8.9	29	SE	3	1.3	.....	1cs	0	Calm	.....	0	0	Clear	
Savannah, Georgia	30.17	766.3	30.26	768.6	62	16.7	88	E	5	2.2	.....	1ck	0	SW	.....	0	0	Clear	
Shreveport, Louisiana	29.77	756.1	29.99	761.7	68	20.0	84	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.18	614.2	.....	.....	52	11.1	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.26	768.6	30.29	769.4	59	15.0	82	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.01	762.2	30.14	765.5	50	13.3	81	S	2	0.9	.....	9c	0	S	.....	0	0	Cloudy	
Stockton, Texas	26.81	681.0	29.81	757.2	67	19.4	50	W	8	1.8	.....	4k	0	SW	.....	0	0	Fair	
Thatcher's Island, Mass	30.10	764.5	30.15	765.8	56	13.3	87	SW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.21	741.9	29.86	758.4	67	19.4	74	S	12	5.4	.....	2c	0	Calm	.....	0.02	0.5	Clear	
Tucson, Arizona	.....	.....	.....	.....	60	15.6	40	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.22	767.6	30.26	768.6	70	21.1	80	NE	10	4.5	.....	2ck	Haze	SE	Calm	0	0	Fair	
Umatilla, Oregon	29.44	747.8	.....	.....	45.0	7.2	68	W	24	10.7	.....	.....	10s	.....	W	0.41	10.4	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	SW	.....	.....	2	.....	10n	.....	SW	.....	.....	Raining	
Uvalde, Texas	28.99	736.3	29.78	756.4	75	23.9	86	SE	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.85	758.2	30.10	764.5	67	19.4	89	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	23.77	603.8	29.25	742.9	34	1.1	79	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Visalia, California	29.62	752.3	29.99	761.7	52	11.1	100	Calm	0	0	.....	0	0	.....	.....	0.27	6.9	Clear	
Washington, D. C.	30.08	764.0	30.19	766.8	53	11.7	86	W	2	0.9	.....	5c;cs	0	NW	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	51	10.6	79	SE	.....	.....	1	0	Haze	.....	Calm	0	0	Hazy	
Wilmington, N. Carolina	30.19	766.8	30.27	768.8	54	12.2	93	E	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.47	646.9	29.83	757.7	34	1.1	90	SW	8	3.6	.....	10k	0	W	.....	0.07	1.8	Cloudy	
Wood's Holl, Mass	30.15	765.8	30.20	767.1	60	15.6	76	SW	12	5.4	.....	2cs	0	NW	.....	0	0	Clear	
Yankton, Dakota	28.24	717.3	29.48	748.8	49	9.4	78	SE	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.67	753.6	29.85	757.7	62	16.7	52	W	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	30.02	762.5	30.07	763.8	29.0	— 1.7	94	N	18	8.0	.....	2k	0	NW	.....	0	0	Fair	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	77	25.0	76	SE	3.6	1.6	.....	0	2cs	.....	SE	1.23	31.2	Fair	Chas. Hasselbrack.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	86	30.0	76	Calm	0	0	.....	2c	5ks	E	.....	0	0	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.07	763.8	30.08	764.0	81	27.2	95	Calm	0	0	.....	8c	8n	W	E	0	0	.....	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	81	27.2	.....	NE	22.9	10.2	.....	.....	.....	.....	.....	0.01	0.3	Partly cl'dy.	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.98	761.5	29.98	761.5	84	28.9	75	E	.....	.....	1	0	6k	.....	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.22	640.4	.....	.....	68.2	20.1	76	Calm	0	0	.....	0	3ks	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I.	28.75	755.6	30.07	763.8	74	23.3	73	E	.....	.....	.....	.....	n	.....	.....	Blank	Blank	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1 706 feet, or 520.1 m.; Boerne, 1 333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3 560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,840.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1 759 (?) ft., or 536.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,196 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft. or 1,586.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla (?); Lead City, (.); Llason 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte 2,076 ft., or 567.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott 5 680 (.) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.83 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.28	769.1	77	25.0	77	25 0	69	E	16	7.2	.....	.....	2	.....	SE	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.09‡	764.3‡	.....	.....	52	11.1	93	SSW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	29.99*	761.7*	61	16.1	56.5	13.6	87	N	.....	.....	3	.....	9k;ks	.....	N	2.55	64.8	.....	.....	Cloudy	
Adams. Valparaiso, Chili	30.15	765.8	67	19.4	59	15.0	94	NNE	.....	.....	1	.....	10	.....	WSW	.....	.....	Smooth	NNE	Cloudy	
Alaska, S. 18° 13′ W. 75° 55′	30.22	767.6	66	18.9	63	17.2	67	ESE	.....	.....	4	.....	10	.....	E	0	0	Smooth	.....	D. clouds	
Alliance, Smyrna, Turkey	30.16‡	766.1‡	.....	.....	72	22.2	67	W	.....	.....	2-3	.....	4	.....	Calm	.....	.....	.....	.....	Hazy	
Ashuelot. Nagasaki, Japan	30.10	764.5	68	20.0	66	18.9	74	NNE	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy	
Canonicus, New Orleans, La	30.06	763.5	54	12.2	78	25.6	65	E	.....	.....	2	.....	4	.....	.....	.....	.....	.....	.....	Fair	
Colorado. New York, N. Y.	30.08‡?	764.0‡?	.....	.....	59	15.0	82	SW	8	3.6	.....	.....	8	.....	NW	0	0	.....	.....	Hazy	
Constitution, Havre, France	.....	.....	.....	.....	56	13.3	94	E	.....	.....	3	.....	9	.....	Calm	.....	.....	.....	.....	Cloudy	
Despatch, Constantinople, Turkey	30.19‡	766.8‡	.....	.....	73	22.8	67	S	.....	.....	1	.....	5	.....	S	.....	.....	.....	.....	Fair	
Essex, S. 37° 10′, E. 6° 42′	29.68	753.9	56	13.3	52	11.1	93	SW	.....	.....	6	.....	5	.....	SW	.....	.....	Bough	SW	Fair	
Franklin, Norfolk, Va	30.33	770.4	63	17.2	59	15.0	94	S	7.3	3.3	.....	.....	2	.....	N	0	0	.....	.....	Clear	
Gettysburg Port Said, Egypt	29.94‡	760.5‡	.....	.....	84	28.9	100	NE	.....	.....	3	.....	1	.....	Calm	0	0	Light	SW	Clear	
Guard. N. 0° 42′, W. 37° 40′	30.02	762.5	83	28.3	82	27.8	75	E	.....	.....	5	.....	0	.....	.....	.....	.....	Mod'ate	E	Clear	
Hartford, Santos, Brazil	30.08	764.0	.....	.....	73	22.8	67	S	2.4	1.1	.....	.....	0	.....	.....	0	0	Smooth	.....	Clear	
Marion, Trieste, Austria	29.96	761.0	63	17.2	63	17.2	83	Calm	.....	.....	0	.....	10	.....	Calm	Heavy	Heavy	.....	.....	Cloudy	
Michigan, Buffalo, N. Y.	29.92†	760.0†	.....	.....	63	17.2	83	S	.....	.....	6	.....	8	.....	S	.....	.....	.....	.....	Cloudy	
Monocacy, Yokohama, Japan	30.01‡	762.2‡	.....	.....	59	15.0	82	NNW	.....	.....	2-3	.....	5	.....	NNW	.....	.....	.....	.....	.....	
New Hampshire, Port Royal, S. C.	30.45	773.4	75	23.9	73	22.8	67	E	5	2.2	.....	.....	2	.....	ENE	0	0	.....	.....	Fair	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	63	17.2	83	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.13	765.3	63	17.2	56	13.3	87	SSE	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	Fair	
Passaic, Washington, D. C.	.....	.....	.....	.....	55	12.8	100	W	.....	.....	1	.....	2	.....	SE	.....	.....	.....	.....	Clear	
Plymouth, N. 26° 27′, W. 62° 37′	30.11	764.8	77	25.0	77	25.0	77	NNW	.....	.....	1	.....	8	.....	NW	.....	.....	Long	WNW	Drizzling	
Powhatan, Boston, Mass.	30.24‡?	768.1‡?	.....	.....	55	12.8	87	SW	4.2	1.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Ranger, Hong-Kong, China	30.10	764.5	80	26.7	79	26.1	86	NW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	29.91	759.7	77	25.0	77	25.0	91	SE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.09‡	764.3‡	.....	.....	60	15.6	71	SW	.....	.....	1	.....	2	.....	NW	0	0	.....	.....	Clear	
Saratoga, Philadelphia, Pa.	30.10	764.5	.....	.....	57	13.9	87	S	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Clear	
St. Louis, League Island, Pa	30.10	764.5	62	16.7	57	13.9	94	SW	9	4.0	.....	.....	8	.....	NW	0	0	.....	.....	Fair	
Supply, Havre, France	29.95	760.7	58	14.4	58	14.4	70	SE	.....	.....	0-1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Swatara, Boston, Mass.	30.15‡	765.8‡	.....	.....	58	14.4	82	SW	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Hazy	
Trenton, N. 40° 06′, E. 4° 38′	29.89‡	759.2‡	.....	.....	78	25.6	82	ENE	.....	.....	2	.....	2	.....	E	0	0	Smooth	.....	Clear	
Tuscarora, Half-Moon Bay, Cal.	29.90	759.4	58	14.4	54	12.2	80	NW	.....	.....	1	.....	5	.....	Calm	0.2	5.	Long	SW	Fair	
Vandalia, Gibraltar	29.93‡	760.2‡	.....	.....	63	17.2	89	W	.....	.....	1	.....	10	.....	W	.....	.....	.....	.....	Raining	
Wabash, Boston, Mass.	.....	.....	.....	.....	59	15.0	88	SW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.

*It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.			Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 34° 37′, E. 167° 14′		30.32*	770.1*	68	20.0	90	NE			3		8		WSW	Light	Mod'ate	NW	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 14° 10′, W. 92° 25′		29.98*	761.5*	81	27.2	100	NNW			3–4		8		WNW		Ground	NW	Showery	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.90*	761.7*	51	10.6	79	Calm			0		8		NW	0			Fine	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic N. 42° 09′, W. 55° 51′		29.91*	759.7*	57	13.9	??	N			6				N	0	High	N	D. clouds	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic,																			Capt. W. H. Thompson.
S. S. Celtic, N. 47° 36′, W. 44° 8′		29.60*	751.8*	50	10.0	??	N			6		10		WNW	0	None		D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, Hong-Kong China		29.93	760.2	77	25.0	82	NE			5		10		NE		3	NE	Misty	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		CHARACTER.	DIRECTION FROM—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.17*	766.3*	69	20.6	90	W			1		0			0			Clear	Captain Sargent.
S. S. Ohio, Liverpool		30.04	763.0	54	12.2	93	SSE			1		10		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.																			
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Readle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.																			
MARINE SERIES. (Miscellaneous.																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, La Guayra, Venezuela		29.87	758.7	85	29.4	64	Calm	0	0			2k			0	Swell	NE	Clear	Capt. James Jorgensen.
NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.																			

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 16, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.96	761.0	63.5	17.5	90	SSW	.....	.....	1	.....	8	.....	.....	0.458	11.5	Very cloudy	Kesxuche.
Algiers	.....	.....	29.89	759.2	77.0	25.0	76	ESE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Tourillere.
La Calle	.....	.....	30.00	761.9	77.0	25.0	87	SE	.....	.....	1	.....	8	.....	.....	0	0	Very cloudy	Foufrede.
Tunis	.....	.....	30.06	763.4	79.7	26.5	75	ENE	.....	.....	3	.....	9	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	30.10	764.5	82.4	28.0	.....	NW	.....	.....	5	.....	3	.....	.....	0	0	Pretty fair..	Gau.
Saida	.....	.....	29.91	759.7	73.8	26.0	18	S	.....	.....	7	.....	4	.....	.....	0	0	Cloudy.....	Herbin.
Tebessa	.....	.....	30.06	763.5	82.4	28.0	22	SW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy.....	Watrin.
Geriville	.....	.....	29.94	760.4	73.8	23.2	39	S	.....	.....	8	.....	9	.....	.....	0	0	Covered	Brugnlaux.
Laghouat	.....	.....	30.11	764.9	83.8	28.8	29	N	.....	.....	5	.....	2	.....	.....	0	0	Fair	Bertrand.
Biskra	.....	.....	30.04	763.0	90.3	32.4	32	SE	.....	.....	1	.....	2	.....	.....	0	0	Fair.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.60	749.2	30.04	762.9	64.8	18.2	67	NE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. Ivan Stoiir.
Cracow, I. R. Observatory	29.32	744.6	30.08	764.1	55.4	13.0	96	E	.....	.....	1	.....	10	.....	.....	0.339	8.6	.....	Dr. Wierzbiski
Eperies	29.15	740.5	30.02	762.6	58.6	14.8	89	Calm	.....	.....	0	.....	10	.....	.....	0.665	16.90	.....	Julius Mikolik.
Gratz	28.82	732.1	30.06	763.4	60.4	15.8	81	S	.....	.....	2	.....	10	.....	.....	0.142	3.60	.....	Andreas Rospini.
Hermannstadt	28.60	726.5	30.08	764.1	55.6	13.1	87	ENE	.....	.....	2	.....	10	.....	.....	0.167	4.25	.....	Prof. A. Gottschling.
Kremsmünster	28.76	730.3	30.10	764.4	53.8	12.1	91	Calm	.....	.....	0	.....	10	.....	.....	0.098	2.5	.....	Prof. C. Wagner.
Lemberg	29.07	738.3	30.07	763.7	56.1	13.4	94	SE	.....	.....	1	.....	10	.....	.....	0.370	9.4	.....	Dr. T. Stanecki.
Pola	29.97	761.1	30.08	763.9	64.4	18.0	78	WNW	.....	.....	1	.....	6ks	.....	.....	0.236	6.0	.....	I.R.Hydrographic Office.
Szathmar	29.62	752.3	30.08	764.1	57.0	13.9	95	SE	.....	.....	3	.....	10	.....	.....	0.772	19.6	.....	Julius Csics, S. J.
Szegedin	29.76	755.9	30.04	762.9	63.3	17.4	72	S	.....	.....	1	.....	6	.....	.....	0.098	2.50	.....	Karl Stancel.
Trieste	30.01	762.2	30.11	764.8	61.9	16.6	83	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	P. Busin.
Vienna	29.35	745.4	30.06	763.4	59.9	15.5	71	W	.....	.....	2	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.59	726.2	30.11	764.9	49.8	9.9	87	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.89	759.2	30.09	764.8	53.8	12.1	81	ENE	.....	.....	1	.....	10	.....	ESE	0	0	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Foggy.....	M. E. de Cae
Maeseyck	29.98	761.4	30.11	764.7	52.9	11.6	81	ENE	.....	.....	0	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

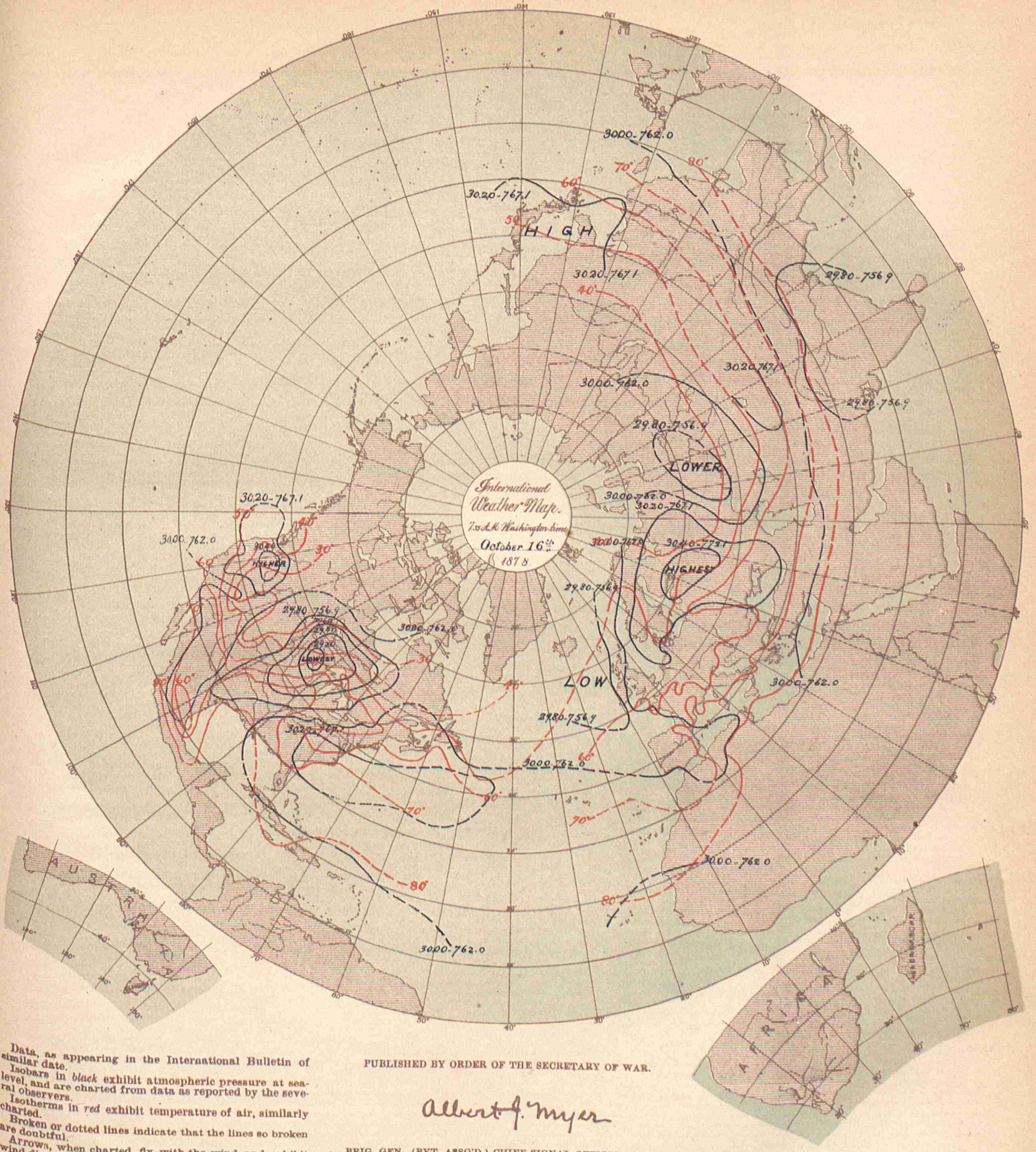
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.93	760.2	30.03	762.7	53.6	12.0		SE	16	7.2			9			0.005	0.13	Overcast	W. Boswell.
Ardrossan	29.98	761.5	30.00	762.0	56	13.3		SE			2		9					Foggy	George Carrick.
Armagh, Observatory			30.02	762.5	56.9	13.8		SSW	12	5.4			2					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			30.04	763.0	54.0	12.2		SE	10	4.5			10					Misty	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.66	753.4	30.06	763.5	54.9	12.7		SW			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.89	759.2	84	28.9		NE			1		4					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			30.07	763.8	57.0	13.9		E			1		10			Blank	Blank	Overcast	H. Todd. [H. C.
Cardington			30.10	764.5	55.0	12.8		E			0		10					Drizzling	John McLaren.
Chatham, School M. E.	29.95	760.7	30.08	764.0	56.7	13.7		Calm			0		10					Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.55	725 2	30.02	762.5	54.2	12.3		E			1		8					Gloomy	Alexander Watt.
Donaghadee	29.97	761.2	30.00	762.0	57	13.9		SSW			3		5					D. clouds	J. Mac Gowan.
Dover	30.04	763.0	30.07	763.8	57	13.9		SE			1		8					Misty	J. Costello.
Falmouth, Observatory	29.84	757.9	30.07	763.8	58.2	14.6		NE			1		9					Foggy	The Staff.
Fort Napier, (Natal)	27.04	686.8	29.36	745.7	81.2	27.3		NE			3		1					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	84.0	28.9		Calm			0		4					Drizzling	
Galway, Queen's College			29.90	759.4	58	14.4		S			2		8					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.91	759.7	29.96	761.0				SW			3		3					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.82	757.4	30.02	762.5	52.9	11.6		SE			1		10					Gloomy	D. G. Maclean.
Great Yarmouth	30.10	764.5	30.11	764.8	56	13.3		SE			3		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.91	759.7	30.08	764.0	55.8	13.2		E			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.81	757.2	30.02	762.5	60	15.6		ESE			1		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston			30.07	763.8	62	16.7		E			0		4k			0	0	Hazy	M. P. Moyle.
Holyhead	29.99	761.7	30.04	763.0	57	13.9		SSW			2		10					Misty	John Tilston.
Jersy	29.78	756.4	30.07	763.8	60.0	15.6		Calm			0		2					D. clouds	J. Fisher.
Kew, Observatory	30.03	762.7	30.07	763.8	55.7	13.2		E	0	0								Foggy	The Staff.
Kingstown	30.00	762.0	30.03	762.7	58	14.4		SE			3		6					D. clouds	George Mitchell.
Leicester, Museum			30.08	764.0	53.9	12.2		S			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.95	760.7	30.02	762.5	81	27.2		SW			2		4s					D. clouds	Sergt. Beckett.
Nairn	29.85	758.2	29.94	760.5	55	12.8		ESE			1		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.07	763.8	78.5	25.8		NE			4		4					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.90	759.4	30.09	764.3	54.3	12.4		Calm			0		10n		Calm	0.091	2.31	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.55	750.6	30.03	764.0	52.6	11.4		ENE			0–1		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			30.07	763.8	54	12.2		Calm			0		10					Misty	H. E. Bellamy.
Plymouth	29.98	761.5	30.05	763 3	59.0	15.0		Calm			0		10					Overcast	John Merrifield.
Roche's Point	30.00	762.0	30.04	763.0	56	13.3		SSW			3		8					Foggy	W. Kennedy.
Saint Ann's Head	29.90	759.4	30.07	763.8	59	15.0		ESE			2		7					Misty	John C. Walker.
Sandwick Manse, (Orkneys)			29.92	760.0	53.6	12.0		S	28	12.5			10					Overcast	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.05	763.3	68.8	20.4		SW			1		5					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.91	759.7	30.19	766.8	53.9	12.2		E			1		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth, Rectory	30.00	762.0	30.03	762.7	56.8	13.8	78	Calm			0		10			0	0	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.66	753.4	30.07	763.8	53.0	11.7		S			1							Misty	Rev. S. J. Perry.
Stornoway, Lewis C., (Hebr.)																			John Sutherland.
Stratfield Turgiss	29.87	758.7	30.09	764.3	53.3	11.8		Calm			0		10					Foggy	Rev. C. H. Griffith, F. M. S.
Thurso	29.87	758.7	29.93	760.2	53	11.7		SSE			3		10					Gloomy	John Trotter.
Truro, Royal Institution			30.06	763.5	62	16.7		NE			2		5					D. clouds	W. Newcombe.
Valencia, Observatory	29.76	755.9	29.79	756.7	57.6	14.2		SSW	19	8.5			7					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.72	754.9	51.0	10.6	81	W			3		10km			0.25	6.3	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.3	76.8	24.9	68	E	19.0	8.5		1	4		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	29.78	756.4	29.88	758.9	59.0	15.0	49	N	28	12.5			6			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 42° 5′, W. 55° 40′			30.27	768.8	64	17.8		W			2		1			3	ENE	Blue sky	Capt. Alex. Wilson.
Barque Commewyne, N. 13° 25′, W. 52° 0′			29.93	760.2	85	29.4		WNW			3		4			2	NNE	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 20° 55′, W. 68° 10′			29.94	760.5	81	27.2					6		9			7	NE	Threatening	Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.19	665.2	29.91	759.7	67.6	19.8	92	Calm			0		9cs			0.4	10.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.14	765.5	30.19	766.7	52.5	11.4	96	ESE			2		10					Raining	
Faröe	30.13	765.2	30.15	765.7	53.2	11.8	85	E			2		6						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.97	753.6	29.71	754.5	51.8	11.0	87	S			4		10					Raining	
Vestervig	30.05	763.2	30.22	767.5	49.6	9.8	98	E			2		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.53	750.1	30.08	764.1	52.2	11.2	93	SW			1		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	29.84	758.0	29.95	760.7	62.2	16.8	77	NE			2		2		N	0	0	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	30.03	762.8	30.11	764.8	66.2	19	72	NNW			1		5		WSW	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.51	749.6	30.07	763.6	51.2	10.2	59	E			1		0			0	0	Clear	C. Saillard.
Beauvais, Normal School	29.82	757.4	30.10	764.6	55.2	12.9	81	E			1		0			0	0	Clear	Frere Eugene Marie, Director.
Besançon	29.22	742.1	30.10	764.5	63.7	17.6	63	E			2		1		N	0	0	Clear.	Normal School.
Bourg-en-Bresse, N. School	29.27	743.4	30.19	766.9	64.6	18.1	65	S			4		0			0	0	Clear.	M. Marlot, Director.
Bourges, Normal School	29.50	749.3	30.05	763.2	61.5	16.4	76	NNW			2		1		NNW	0	0	Clear.	A. Wagner, Director.
Brest, Naval Observatory	29.74	755.4	29.98	761.6	59.4	15.2	72	NE			1		0			0	0		The Staff.
Carcassonne, Normal School	29.61	752.0	30.00	762.1	70.9	21.6	69	E			3		5	E	E	0	0	Cloudy	Septembre, Director.
Caen	29.97	761.3	30.04	763.1	62.6	17	76	S			1		1		S	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.45	748.0	30.01	762.3	60.6	15.9	83	E			1		0			0	0	Clear	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.78	756.4	30.10	764.5	52.2	11.2	85	SE			1		10			0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.70	729.0	30.02	762.5	70.2	21.2	41	NE			1		2			0	0	Slightly cl'dy	Alluard, Director.
Commercy, Normal School	29.24	742.6	30.08	764.1	53.4	11.9	83	E			1		clr		E	0	0		Dr. Coulet, Director.
Commune de Grèasque*	29.02	737.2	30.17	766.2	64.9	18.3	55	W			1		2	SW		0	0	¼ Covered	M. Kina.
Grenoble, Normal School	29.28	743.6	30.04	763.0	59.0	15	70	ESE			1		1s			0	0	Clear	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.23	742.4	29.44	747.8	45.3	7.4	89	SW			1		0			0.181	4.6	Clear	Mouillot, Director.
Le Mans, Normal School	29.76	755.8	30.07	763.6	59.7	15.4	70	SE			1		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.4	30.08	764.1	63.5	17.5	68	NW			3		0			0	0	Clear	Baudry, Director.
Lorient, Naval Observatory	29.95	760.7	30.05	763.3	62.2	16.8	63	ESE			1					0	0		T. Carré, Director.
Mâcon, Normal School	30.07	763.7	30.10	764.6	57.2	14	58	S			1		0			0	0	Clear	M. Galsin, Director
Mirecourt, Normal School	29.05	737.9	30.09	764.2	57.2	14.0	76	NNW			1		2s		SSE	0	0	Slightly cl'dy	M. Barbier, Director.
Nismes, Normal School	29.95	760.6	30.15	765.7	67.3	19.6	79	E			1		5		N	0	0	Cloudy	Boyer, Director.
Orleans																			
Privas, Normal School	29.09	738.9	30.15	765.8	61.3	16.3	79	S			1		8	N	S	0	0	Very cloudy	M. Cantier.
Puy de Dome (Summit)	25.26	641.5			56.3	13.5	52	SSW			1		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.98	761.5	30.01	762.3	67.3	19.6	83	E			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.98	761.5	30.07	763.7	64.0	17.8	57	SE			1		2		SE	0	0	Slightly cl'dy	F. Lucard, Director.
Saint Malo (Port)			30.04	763.0	59.5	15.3	69	N			1		0			0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.90	759.5	30.07	763.7	58.5	14.7	74	NE			0–1		0			0	0		E. Renou.
Tarbes, Normal School	28.93	734.9	30.00	762.0	60.8	16	79	SSW			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.49	749.1	30.19	766.8	70.2	21.2	74	SE			1		0			0	0	Clear	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	80.6	27										0	0		L'Abbé Marchés.
Lyons, Observatory			30.01	762.3									7			0	0		
Marseilles, Observatory			30.09	764.2	70.9	21.6	58	SW			1		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.95	633.8	30.27	768.8	61.7	16.5	31	W			4		3		SE	0	0		M. Cave.
Nice			30.12	765.0	65.5	18.6	86	S			1		5			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.78	756.5	30.06	763.5	57.9	14.4	78	ESE			1		0			0	0		Marié Davy, Director
Perpignan			30.02	762.6	72.7	22.6	72	SE	13.0	5.83			3		SW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Bayiac.
Pic du Midi, (Plantade,) H. P.	22.69	573.9			51.1	10.6		S			1		10			0	0	Cloudy	Gen'l de Nansouty
Toulouse, Observatory	29.30	744.3	30.03	762.7	70.3	21.3	63	SSE			4		4			0	0		B. Baillaud.
Tours	29.04?	752.8?	29.84?	757.8?	63.6	17.0	70	SE			1		0			0	0	Clear	C. Marquet.
Versailles			30.07	763.7	60.4	15.8	55	SE			1		0			0	0	Light fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.17	766.4	30.20	767.0	61.3	16.3	90	SE	3.8	1.7		4clr		WSW		0	0	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer, corrected for instrum'tal error and temperature. Inches.	Barometer, corrected for instrum'tal error and temperature. Millimeters.	Barometer, reduced to sea-level. Inches.	Barometer, reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–12.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.19	741.3	30.08	762.7	52.9	11.6	92	W			1		9	W		0.039	1.0	Raining	Prof. Dr. Hoh.
Berlin	29.97	761.2	30.14	765.6	54.7	12.6	81	SE			2		10			0.012	0.3		Prof. Arndt.
Breslau	29.58	751.2	30.11	764.7	52.3	11.3	100	NE			1		10			0.662	16.84		Royal University Obs'y
Carlsruhe	29.66	753.4	30.10	764.4	54.7	12.6	85	SW			1		5			0	0		Albert Senz.
Cassel	29.50	749.4	30.11	764.9	52.9	11.6	77	NE			2		10	NE		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.93	760.2	30.09	764.3	53.6	12.0	76	E			2		9			0	0	Light fog	Director Lose.
Emden	30.19	766.7	30.22	767.6	54.7	12.6	81	E			2		8			0	0		Prof. Prestel.
Frankfort on the Main	29.75	755.7	30.12	765.0	53.6	12		NNE			2		10			0.244	6.2		Physical Society.
Friedrichshafen	28.67	728.1	30.11	764.9	51.1	10.6	93	WNW			2		0			0	0		M. Wilhelm.
Hamburg	30.08	764.1	30.15	765.9	50.7	10.4	91	N			1		10			0	0	Foggy	Captain F. Hegemann.
Kiel	30.13	765.3	30.15	765.7	54.0	12.2	95	ENE			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	30.07	763.8	30.15	765.9	57.9	14.4	75	E			3		4			0.004	0.1		Prof. E. Luther.
Köslin			30.09	764.3	58.3	14.6		NE			4		1			0.016	0.4		H. Müller.
Leipsic, Observatory	29.71	754.5	30.13	765.3	60.7	16.4	93	E			1		10			0.476	12.1	Foggy	Prof. Bruhns.
Memel, Naval School	30.17	766.3	30.22	767.5	60.4	15.8	59	E			4		0						Reinbrecht and Skalweit.
Neufahrwasser	30.15	765.9	30.17	766.3	54.3	12.4	82	ENE			2		7			0	0		A. Lothes.
Posen	29.86	758.4	30.15	765.9	53.6	12.0	85	N			5		10			0.059	1.5		Dr. Magener.
Strassburg (in Alsace)	29.56	750.9	30.11	764.9	54.5	12.5	86	Calm			0		1			0	0	Astronomical Observatory	
Stuttgart	29.11	739.5	30.05	763.3	57.2	14.0	78	NE			1		3	W		0	0		Prof. Schoder.
Treves, (Trier)	29.55	750.5	30.07	763.8	54.7	12.6	76	E			1		10			0.009	0.22	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.57	725.7	30.05	763.3	57.4	14.1	70	NW	0.9	0.4			6ck		SW	0.091	2.3		Dr. Von Bebber.
Wustrow, Naval School	30.12	765.1	30.15	765.7	56.3	13.5	83	E			2		5ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.72	754.8	30.10	764.4	76.5	24.7		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee													2	S		0	0	D. clouds	
Deesa	29.33	744.9	29.79	756.7	91.0	32.8	39	Calm					10	WNW	WSW	0	0	Overcast	
Bombay	29.71	754.6	29.74	755.5	85.1	29.5	73	NNW	13	5.8			10		NNE	0	0	Overcast	
Poona	27.78	705.6	29.76	755.8	82.9	28.3	54	NNE								0	0	Blue sky	
Lahore	29.00	736.7	29.74	755.3	87.0	30.6	45	Calm	1	0.4			9		E;W	0	0	Thunder	
Belgaum	27.25	692.2	29.78	756.5	75.8	24.3	85	W	8	3.6			1			0	0		
Roorkee	28.87	733.2	29.76	755.9	81.8	27.7	63	Calm	2	0.9						0	0		
Agra	29.20	741.6	29.75	755.6	92.6	33.7	38	W					7		SW	0	0	D. clouds	
Nagpur	28.70	728.9	29.72	755.0	86.6	30.3	62	Calm	3.9	1.7						0	0	Blue sky	
Lucknow	29.40	746.8	29.77	756.1	85.2	29.6	56	Calm	1.4	0.6			1			0	0	D. clouds	
Allahabad	29.44	747.7	29.75	755.6	82.9	28.3	60	Calm	1.2	0.5			4			0	0	D. clouds	
Patna	29.59	751.6	29.77	756.1	83.7	28.7	76	Calm	0.5	0.2			8	W	N	0	0	Foggy	
Hazaribagh	27.75	704.8	29.75	755.6	79.0	26.1	80	N	4.9	2.2			8			0	0	D. clouds	
Cuttack	29.70	754.3	29.78	756.4	82.0	27.8	75	E	1.4	0.6			1			0	0	D. clouds	
Calcutta (Alipore)	29.75	755.6	29.77	756.1	82.4	28.0	83	W	2.0	0.9			0					Blue sky	
Goalpara	29.36	745.8	29.75	755.6	82.9	28.3	74	Calm	1.2	0.5			2			0	0		
Chittagong	29.71	754.6	29.80	757.0	80.4	26.9	91	Calm	2.3	1.0			5			0	0	D. clouds	
Sibsagar	29.42	747.3	29.75	755.7	85.9	29.9	91	Calm	1.0	0.4			3			0	0	D. clouds	
Jubbulpore	28.40	721.4	29.75	755.6	86.0	30.0	52	E	2.0	0.9									

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.70	754.4	30.11	764.8	60.4	15.8	73	S	0.7	0.3	.....	.....	5	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.6	61.9	16.6	73	W	1.8	0.6	.....	.....	7	W	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.90	759.5	30.09	764.3	61.5	16.4	70	E	0.7	0.3	.....	.....	3	W	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.58	751.2	30.09	764.3	61.3	16.3	76	WNW	.....	.....	1	.....	7	.....	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.18	741.2	30.09	764.2	59.9	15.5	74	W	1.3	0.6	.....	.....	3	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.18	715.8	30.09	764.2	57.0	13.9	67	NW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.88	759.0	30.10	764.6	66.9	19.4	70	S	.....	.....	2	.....	9	S	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.93	760.2	30.10	764.4	66.9	19.4	58	SW	4.3	1.9	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.80	756.8	30.11	764.8	63.1	17.3	72	NE	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.88	759.0	30.14	765.5	63.7	17.6	76	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.98	761.6	30.07	763.7	62.1	16.7	73	NNE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.05	763.3	30.10	764.5	61.3	16.3	80	NW	9.4	4.2	.....	.....	2	.....	.....	0.118	3.0	.....	Prof. Luigi Guidi.
Urbino	28.58	726.0	30.13	765.2	57.4	14.1	78	NE	.....	.....	1	.....	5	.....	.....	0.606	15.4	.....	Prof. P. Serpieri
Rome	29.89	759.2	30.07	763.6	72.7	22.6	56	N	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.87	758.7	30.07	763.7	77.0	25.0	59	SW	.....	.....	2	.....	3	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.80	757 0	30.06	763.4	70.0	21.1	84	NNW	6.3	2.8	.....	.....	6	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.84	758.0	30.03	762.8	76.1	24.5	53	E	.....	.....	2	.....	6	E	.....	0	0	.....	Prof. A. Padiotti.
Cosenza	29.20	741.6	30.07	763.7	76.6	24.8	72	SW	0	0	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.80	757.0	30.06	763.4	72.1	22.3	85	E	3.1	1.4	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.98	761.6	30.06	763.5	75.0	24.4	84	SW	2.5	1.1	.....	.....	10	WSW	.....	0	0	.....	Prof. V. Giuliaro.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.96	761.0	30.16	766.0	59.4	15.2	89	NNW	0.5	0.2	.....	.....	0	.....	.....	0.770	19.56	Very clear.	I. Arai, Director.
Tokei (Yeddo) Observatory	30.23	767.8	30.30	769.6	52.4	11.3	91	NNE	4.9	2.2	.....	0	0	.....	.....	0	0	Clear.	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	65.9	18.8	81	N	.....	.....	2	8ck	0	.....	.....	0	0	Cloudy	P. Ceballos.
Guadalajara	25.06	636.6	30.10	764.5	55.4	13.0	68	SW	.....	.....	3	8	.....	NW	.....	0	0	Cloudy	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.41	620.2	29.95	760.7	64.0	17.8	82	WNW	.....	.....	1	2c	0	Calm	.....	0	0	Clear.	Prof. M. Leal.
Mexico	23.10	586.8	30.03	762.7	59.0	15.0	90	Calm	0	0	.....	0	8k	.....	N	0.04	1.0	Cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	60.3	15.7	89	Calm	.....	.....	0	3c	0	.....	.....	0	0	Clear	M. V. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzales.
Tlacotalpam	29.86	758.6	29.88	758.8	77	25	89	Calm	.....	.....	0	1	1	SE	SW	0	0	Clear.	M. M. Cházaro.
San Luis Potosi	24.26	614.2	30.14	765.6	63.0	17.2	80	SW	.....	.....	.....	4	0	W	.....	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	29.91	759.8	29.94	760.5	78.8	26.0	84	SW	.....	.....	.....	0	3sk	.....	.....	0	0	Clear	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	60	10	88	NE	.....	.....	1	0	4	.....	NNE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.23	590.1	29.96	761.1	59.0	15.0	81	SSE	.....	.....	.....	0	9	.....	NE	0	0	Covered	Prof. P. Spina.
Durango	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.059	1.5	.....	M. V. de Leon, C. E.
Colima	28.86	720.0	29.98	761.4	77.7	25.4	85	NE	0.8	0.4	.....	0	9	.....	E	0	0	Very cloudy	R. Banda, C. E.
San Juan E. Michapam	29.75	755.6	29.90	759.4	74.3	23.5	.....	Calm	.....	.....	0	0	0	.....	.....	0.153	3.9	Dense fog	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,536.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.12	765.0	30.12	765.0	57.2	14.0	.....	ESE	.....	.....	3	.....	.....	.....	.....	0	0	.....	
Groningen	30.09	764.2	30.14	765.6	51.8	11.0	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	30.13	765.2	30.13	765.2	53.4	11.9	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.10	764.4	30.10	764.4	56.3	13.5	80	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.08	764.1	30.13	765.3	54.1	12.3	78	E	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	H. v d Brink.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.18	766.5	30.23	767.9	52.9	11.6	67	S	11.6	5.2	.....	.....	3	.....	.....	0	0	.....	
Brönö	30.12	765.0	30.16	766.0	52.5	11.4	78	Calm	0	0	.....	.....	8	.....	.....	0	0	.....	
Christiania	30.16	766.0	30.31	769.8	48.0	8.9	84	ENE	4	2	.....	.....	10	.....	.....	0	0	Light fog	
Tromsö	29.91	759.6	29.95	760.7	49.3	9.6	66	SW	25	11	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.90	759.4	30.09	764.2	67.5	19.7	81	SW	6.3	2.8	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo, Major	28.97	735.8	29.99	761.8	63.3	17.4	41	SE	6.9	3.1	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.98	761.4	30.07	763.6	71.6	22.0	50	NNE	5.6	2.5	.....	.....	4	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.59	751.6	29.95	760.7	60 1	15.6	64	S	15.0	6.7	.....	.....	9	NNW	.....	0.003	0.2	.....	The Staff.
Ponta Delgada, (Azores)	30.08	763.9	30.15	765.7	68.7	20.4	64	S	9.4	4.2	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	2	.....	Blue sky	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

NOTE.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.70	754.3	30.12	765.1	55.9	13.3	86	SE	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.85	758.1	30.27	768.8	59.5	15.3	67	E	2	1	.....	.....	0	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	30.16	766.5	30.43	772.8	50.9	10.5	80	ESE	4	2	.....	.....	0k;ks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.41	772.5	30.43	772.9	49.8	9.9	84	SW	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kuopio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch. Forsten.
Kieff	29.65	753.0	30.28	769.0	62.4	16.9	42	SE	9	4	.....	.....	2c;ck	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.21	767.4	30.28	769.2	66.2	19.0	45	ESE	18	6	.....	.....	4s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.26	768.6	30.28	769.1	61.9	16.6	68	ENE	11	5	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.88	758.9	30.44	773.2	48.2	9.0	80	N	9	4	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.11	764.9	30.32	770.0	62.6	17.0	43	E	2	1	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.29	769.3	30.31	769.8	36.5	2.5	69	WSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Tiflis	28.77	730.8	30.17	766.4	64.6	18.1	55	SE	9	4	.....	.....	1k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.26	768.5	30.17	766.4	61.5	16.4	45	N	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.54	750.2	30.01	762.3	45.0	7.2	51	NNW	11	5	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.85	758.2	30.13	765.3	39.4	4.1	44	NNW	9	4	.....	.....	6	.....	.....	.....	.....	.....	Physical Cabinet.
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Sernow.
Ekaterinburg	28.63	727.1	29.61	752.2	31.1	— 0.5	61	NNW	42	19	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Nikuss	29.86	758.5	30.10	764.4	59.9	15.5	49	W	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	
Tashkend	28.60	723.9	30.20	767.1	58.1	14.5	74	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining	Teich, A. M.
Barnaul	29.40	746.7	29.93	760.2	42.4	5.8	44	SW	2	1	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.69	754.0	29.98	761.6	35.4	1.9	69	SSE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Usolzef.
Peking, (China)	30.02	762.6	30.17	766.2	48.7	9.3	65	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	30.21	767.2	30.29	769.4	31.3	— 0.4	85	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 31'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.92	759.9	30.02	762.5	72.0	22.2	69	E	3.2	1.44	.....	2ck	1k	S	.....	0	0	Foggy	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.91	759.6	29.96	761.0	73.8	23.2	61	SE	2.8	1.26	.....	1	7	W	.....	0	0	Almost cov.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.04	686.9	.....	.....	64.8	18.2	66	S	5.0	2.23	.....	.....	8	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.76	705.0	29.99	761.8	54.9	12.7	99	NE	0	0	.....	0	10	.....	.....	0.280	7.1	Raining	The Staff.
Murcia, Met. Obs'y	29.74	755.5	29.89	759.2	73.4	23.0	76	WNW	1.2	0.56	.....	5	5	NW	.....	0.039	0.99	Raining	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.03	737.4	29.91	759.7	64.2	17.9	66	SW	1.8	0.83	.....	.....	3	.....	.....	0.248	6.3	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.95	760.8	30.02	762.4	75.3	24.1	79	ESE	5.4	2.4	.....	0	1n	.....	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.92	759.9	30.02	762.4	62.8	17.1	78	WSW	7.0	3.1	.....	2	7	W	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.82	757.4	29.91	759.7	79.5	26.4	91	SW	4.2	1.86	.....	5s	4k	SE	SE	0.345	8.75	Cloudy	Leonardo de Tejada, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 866 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected for instrum't'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.17	766.3	30.21	767.3	45.7	7.6	.....	S	.....	.....	2	.....	7	.....	.....	0	0	.....	
Umea	30.22	767.6	30.27	768.9	43.9	6.6	91	SW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Hernosand	30.28	767.7	30.28	769.0	42.1	5.6	97	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	30.19	766.9	30.37	771.4	48.2	9.0	81	ENE	.....	.....	2	.....	10	.....	.....	Inap.	Inap.	Foggy	
Wisby	30.21	767.2	30.26	768.7	54.7	12.6	82	E	.....	.....	6	.....	9	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.39	769.4	30.37	771.3	45.3	7.4	89	SSW	.....	.....	.....	.....	10	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	727.7	30.07	763.6	58.3	14.6	69	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
Zurich	28.48	723.4	30.10	764.3	59.0	15.0	78	W	.....	.....	1	.....	1	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.6 mm.; Thermometer, +1.8 cent.; Relative Humidity, —8 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.10	764.6	68.9	20.5	71	S	4	2.0	.....	.....	3	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.17	766.3	77.5	25.3	.....	SW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.95	760.6	81.7	27.6	62	NE	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.99	761.7	30.06	763.5	49.8	9.9	79	Calm	0	0	.....	3c	0	NW	.....	0	0	Fair	Hon. J. Ferguson.
Brockville, Ontario	29.68	753.9	29.97	761.2	60	15.6	.....	Calm	0	0	.....	.....	8s	.....	W	0.03	0.8	Cloudy	W. R. Rigg.
*Chatham, N. B	30.00	762.0	30.06	763.5	53	11.7	70	NW	6	2.7	.....	8c	2ks	NW	NW	Inap	Inap.	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.01	762.2	30.05	763.3	54	12.2	94	SW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.77	756.1	29.96	761.0	69.2	15.1	97	SE	.....	.....	1	.....	10n	.....	.....	0.070	1.78	Light rain	James Smith, M. A.
Dalhousie, N. B	29.95	760.7	30.11	764.8	45	7.2	72	W	.....	.....	1	.....	.....	.....	.....	0.07	1.8	Fine	H. A. Johnson.
Esquimault, B. C	30.12	765.0	30.16	766.1	47.3	8.5	92	Calm	.....	.....	.....	.....	10s	.....	.....	0.02	0.5	Overcast	W. H. Bevis.
*Father Point, Quebec	30.10	764.5	30.12	765.0	42	5.6	83	Calm	0	0	.....	5cs	0	Calm	.....	0.05	1.3	Fair	J. McWilliams.
Fredericton, N. B	30.04	763.0	30.11	764.8	53.9	12.2	88	S	3	1.3	.....	10cs	0	.....	.....	0	0	Overcast	Prof. Harrison.
*Fort Garry Manitoba	28.50	723.9	29.38	746.0	32	0.0	100	N	22	9.8	.....	.....	10n	.....	.....	0.600	15.24	Sleeting	James Stewart.
Granton, Ontario	28.81	731.8	29.88	758.9	60	15.6	.....	S	.....	.....	2	3cs	0	N	.....	0.54	13.7	Fair	James Grant.
*Halifax, N. S	29.93	760.2	30.06	763.5	55	12.8	76	W	5	2.2	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.68	751.3	29.94	760.5	65.7	18.7	78	SW	.....	.....	3	4c	0	.....	.....	0.05	1.3	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	29.95	760.7	29.98	761.5	49	9.4	81	SW	.....	.....	4	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.65	753.1	29.98	761.5	63	17.2	89	S	11	4.9	.....	8k	0	S	.....	0.03	0.8	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.00	762.0	30.04	763.0	58.4	14.7	75	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	C. H. Rigby.
*Montreal, Quebec	29.82	757.4	30.01	762.2	55	12.8	95	E	8	3.6	.....	.....	10s	.....	.....	0.03	0.8	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.16	740.7	29.88	757.7	61	16.1	97	S	10	4.5	.....	2k	8ks	SW	SW	0.40	10.2	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.21	741.9	29.94	760.5	61.7	16.5	94	W	.....	.....	0	0	7ks	.....	.....	0.22	5.6	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.27	743.4	29.94	760.5	62	16.7	94	SW	11	4.9	.....	8c	0	SW	.....	0.02	0.5	Fair	H. Morgan.
Port Hastings, N. S	30.01	762.2	30.06	763.5	59.5	15.3	.....	NW	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.31	744.5	29.94	760.5	63	17.2	86	S	5	2.2	.....	5ck	0	W	.....	0.01	0.3	Fair	M. Payne.
*Quebec, Quebec	29.71	754.6	30.01	763.0	51	10.6	79	NE	.....	.....	5	.....	10n	.....	NE	0.09	2.3	Light rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.45	748.0	29.90	759.4	51	10.6	94	SE	6	2.7	.....	.....	10s	.....	SE	0.08	2.0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.05	763.3	30.10	764.5	50	10.0	92	NW	1	0.4	.....	.....	5s	.....	.....	0	0	Cloudy	Dr. Gove.
St. John, N. B	29.94	760.5	30.10	764.5	49	9.4	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.10	739.1	29.79	756.7	64	17.8	83	S	16	7.2	.....	.....	10n	.....	SW	0.83	21.1	Threatening	K. Stewart.
Stayner, Ontario	29.10	739.1	29.86	758.4	60	15.6	96	SE	5	2.2	.....	.....	8ks	.....	SW	0.80	20.3	Cloudy	R. J. Cole.
Stratford, Ontario	28.64	727.4	29.88	758.9	60.9	16.1	91	SW	15.0	6.7	.....	2cs; cs	2s	NW	.....	0.076	1.93	Fair	C. J. MacGregor, M.
*Sydney, C. B	30.01	762.2	30.04	763.0	60	15.6	73	SW	8	3.6	.....	0	2s	.....	.....	0	0	Clear	T. C. Hill.
*Toronto, Ontario	29.66	753.8	29.94	760.5	60	15.6	93	SW	4	1.8	.....	5ck	5ks	SW	SW	0.18	4.6	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	29.96	761.0	30.13	765.3	48	6.1	92	S	.....	.....	.....	1k	2s	.....	.....	0.01	0.3	Fair	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,025 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.84	757.9	30.06	763.5	60	15.6	77	S	7	3.1	.....	2cs	5s	W	W	0	0	Fair	
Alpena, Michigan	29.05	737.9	29.66	753.4	60	15.6	94	S	12	5.4	.....	.....	10s	.....	SW	0.20	5.1	Cloudy	
Atlanta, Georgia	29.04	737.6	30.17	766.3	63	17.2	88	SE	6	2.7	.....	.....	10ks	.....	SE	0	0	Cloudy	
Atlantic City, New Jersey	30.15	765.8	30.16	766.1	64	17.8	83	SW	10	4.5	.....	2ck	0	Calm	.....	0	0	Clear	
Augusta, Georgia	30.06	763.5	30.25	768.3	61	16.1	88	Calm	0	0	.....	8k	Sm'e	S	.....	0	0	Smoky	
Baltimore, Maryland	30.10	764.5	30.15	765.8	58	14.4	82	S	2	0.9	.....	Haze	Fog	Calm	Calm	0	0	Foggy	
Barnegat, New Jersey	30.14	765.5	30.16	766.1	63	17.2	83	SW	14	6.3	.....	8ck	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	27.76	705.1	29.61	752.1	35	1.7	80	NW	26	11.6	.....	.....	10s	.....	NW	0.85	8.9	Cloudy	
Boerne, Texas	28.88	720.8	.....	.....	74	23 3	90	S	16	7.2	.....	.....	10s	.....	S	0	0	Cloudy	
Boise City, Idaho	27.46	697.5	30.42	772.7	28	— 2.2	77	S	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Boston, Massachusetts	29.97	761.2	30.13	765.3	60	15.6	88	SW	8	3.6	.....	8cs;k	Haze	W	Calm	0	0	Fair	
Brackettville, Texas	28.69	728.7	29.66	753.4	78	25.6	78	S	8	3.3	.....	.....	10s	.....	S	0	0	Cloudy	
Breckenridge, Minnesota	28.24	717.3	29.20	741.7	39	3.9	91	W	22	9.8	.....	.....	10s	.....	W	2.90	73.7	Cloudy	
Brownsville, Texas	29.79	756.7	29.85	758.2	80	26.7	78	S	10	4.5	.....	2k	0	S	.....	0	0	Clear	
Buffalo, New York	29.28	743.2	29.94	760.5	65	18.3	73	S	14	6.3	.....	2c	0	W	.....	0.02	0.5	Fair	
Burkes, Arizona	.....	.....	.....	.....	58	14.4	22	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.80	756.9	30.06	763.5	62	16.7	77	Calm	0	0	.....	.....	10s	.....	W	0.15	3.8	Cloudy	
Cairo, Illinois	29.44	747.8	29.82	757.4	72	22.2	76	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Camp Apache, Arizona	.....	.....	.....	.....	45	7.2	60	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.21	640.3	30.01	762.2	50	10.0	45	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.87	682.5	30.36	771.1	40	4.4	19	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.48	698.0	30.05	763.3	37	2.8	71	E	8	3.6	.....	0	0	.....	.....	0.11	2.8	Clear	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	64	17.8	94	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.22	767.6	30.24	768.1	63	17.2	89	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.26	768.6	30.27	768.8	73	22.8	81	S	6	2.7	.....	0	Haze	.....	S	0	0	Hazy	
Cape May, New Jersey	30.16	766.1	30.19	766.8	64	17.8	72	SW	18	8.0	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.04	737.6	29.71	754.6	77	25.0	82	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Charleston, South Carolina	30.21	767.3	30.28	769.1	70	21.1	90	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	30	— 1.1	78	NW	28	12.5	.....	2ks	0	NW	.....	Inap.	Inap.	Clear	
Chicago, Illinois	28.95	735.3	29.60	751.8	67	19.4	79	S	14	6.3	.....	5k	0	SW	.....	0.59	15.0	Fair	
Cincinnati Ohio	29.37	746.0	30.00	762.0	66	18.9	64	S	14	6.3	.....	9cs;k	0	W;SW	.....	0	0	Cloudy	
Cleveland, Ohio	29.26	743.2	29.96	761.0	63	17.2	67	S	18	8.0	.....	0	0	.....	.....	0.04	1.0	Clear	
Coleman City, Texas	28.01	711.4	29.58	751.3	72	22.2	76	SW	8	3.6	.....	0	5ks	.....	W	0	0	Fair	
Columbus, Ohio	29.17	740.9	29.99	761.7	61	16.1	77	S	9	4.0	.....	8k	0	S	.....	0	0	Fair	
Concho, Texas	27.88	708.1	29.48	748.8	73	22.8	63	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.33	745.0	29.77	756.1	74	23.3	90	S	14	6.3	.....	.....	10s	.....	S	0	0	Cloudy	
Davenport, Iowa	28.83	732.3	29.42	747.3	70	21.1	80	S	20	8.9	.....	0	4ks	.....	S	1.00	25.4	Fair	
Decatur, Texas	28.76	730.5	29.87	758.7	74	23.3	81	SW	18	8.0	.....	.....	10s	.....	SW	0	0	Cloudy	
Denison, Texas	28.96	735.6	29.71	754.6	73	22.8	81	S	16	7.2	.....	10k	0	SW	.....	0	0	Cloudy	
Denver, Colorado	24.69	627.1	29.91	759.7	40	4.4	25	NW	12	5.4	.....	0	2s	.....	Calm	0	0	Clear	
Des Moines, Iowa	28.57	725.7	29.41	747.0	55	12.8	81	W	10	4.5	.....	.....	10s	.....	W	1.28	32.5	Cloudy	
Detroit, Michigan	29.18	741.2	29.83	757.7	63	17.2	78	SW	16	7.2	.....	0	1s	.....	Calm	0.04	1.0	Clear	
Dodge City, Kansas	27.19	690.6	29.46	748.3	44	6.7	92	NW	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	28.72	729.5	29.37	746.0	69	20.6	80	S	17	7.6	.....	8k	2ks	S	Calm	0.83	21.1	Cloudy	
Duluth, Minnesota	28.56	725.4	29.21	741.9	47	8.3	92	NE	20	9.8	.....	.....	10n	.....	NE	1.33	33.8	Light rain	
Eagle Pass, Texas	29.01	736.8	29.71	754.6	77	25.0	77	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Eastport, Maine	30.04	763.0	30.11	764.8	51	10.6	93	W	4	1.8	.....	10ck;hz	Haze	W	Calm	0	0	Hazy	
Edinburg, Texas	.....	.....	.....	.....	79	26.1	87	S	.....	.....	6	2c	5s	S	S	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	70	21.1	52	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.28	743.7	29.97	761.2	66	18.9	69	S	15	6.7	.....	5c	0	Calm	.....	0	0	Fair	
Escanaba, Michigan	28.81	731.8	29.41	747.0	58	14.4	88	N	16	7.2	.....	.....	10s	.....	N	1.54	39.1	Cloudy	
Florence, Arizona	28.51	724.1	30.11	764.8	50	10.0	65	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.52	648.2	29.58	751.3	50	10.0	32	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.14	638.5	30.10	764.5	65	18.3	23	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.13	739.9	29.63	752.6	74	23.3	72	S	20	9.8	.....	2k	5s	SW	S	0	0	Fair	
Fort Griffin, Texas	28.41	721.6	29.60	751.8	73	22.8	46	W	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	
Fort McKavett, Texas	27.62	701.5	29.47	748.5	75	23.9	77	SW	10	4.5	.....	5k	0	NE	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.54	724.9	29.60	751.8	65	18.3	73	N	8	3.6	.....	0	2s	.....	Calm	0	0	Fair	
Fredericksburg, Texas	28.08	713.2	29.56	750.8	73	22.8	85	S	6	2.7	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	29.86	758.4	29.90	759.4	80	26.7	74	S	19	8.5	.....	2c	2ks	Calm	S	0	0	Fair	
Graham, Texas	28.67	728.2	29.66	753.4	76	24.4	73	Calm	0	0	.....	.....	10ks	.....	W	0	0	Cloudy	
Grand Haven, Michigan	29.02	737.1	29.63	752.6	67	19.4	79	S	28	12.5	.....	.....	10s	.....	S	0.92	23.4	Cloudy	
Indianapolis, Indiana	29.10	739.1	29.85	758.2	67	19.4	69	SE	8	3.6	.....	2k	2s	SW	SW	0	0	Fair	
Indianola, Texas	29.86	758.4	29.88	758.9	78	25.6	78	S	17	7.6	.....	6c;k	0	SW;S	.....	0	0	Fair	
Jacksboro, Texas	28.59	726.2	29.65	753.1	76	24.4	73	SW	3	1.3	.....	0	5ks	.....	W	0	0	Fair	
Jacksonville, Florida	30.18	766.6	30.20	767.1	69	20.6	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	28.87	733.3	29.44	747.8	73	22.8	72	S	24	10.7	.....	.....	9s	.....	W	0.01	0.3	Cloudy	
Key West, Florida	30.02	762.5	30.06	763.5	77	25.0	73	NE	11	4.9	.....	0	1ks	.....	Calm	0	0	Clear	
Kittyhawk, North Carolina	30.25	768.3	30.27	768.8	64	17.8	89	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.19	741.4	30.20	767.1	55	12.8	87	Calm	0	0	.....	1c	0	W	.....	0	0	Clear	
La Crosse, Wisconsin	28.59	726.2	29.27	743.4	66	18.9	89	S	18	8.0	.....	.....	10s	.....	S	1.59	40.4	Cloudy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	49	9.4	71	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.34	745.2	29.66	753.4	77	25.0	86	SE	8	3.6	.....	5k	0	SW	.....	0	0	Fair	
Lead City, Dakota	24.61	625.1	29.88	758.9	26	— 3.3	88	NW	18	8.0	.....	.....	10s	.....	NW	0.58	14.7	Cloudy	
Leavenworth, Kansas	28.65	727.7	29.41	747.8	65	18.3	89	W	6	2.7	.....	0	5ks	.....	SW	0.08	2.0	Fair	
Los Angeles, California	29.65	753.1	29.99	761.7	52	11.1	82	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.43	747.5	29.97	761.2	67	19.4	64	S	12	5.4	.....	8ck;c	Sm'e	SW	Calm	Inap.	Inap.	Fair	
Lynchburg, Virginia	29.54	750.3	30.22	767.6	59	15.0	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.49	723.6	29.40	746.7	68	20.0	84	S	25	11.2	.....	10k	0	SW	.....	1.10	27.9	Cloudy	
Marquette, Michigan	29.69	728.7	29.34	745.2	62	16.7	83	SE	16	7.2	.....	.....	10s	.....	SE	0.17	4.3	Cloudy	
Mason, Texas	29.17	715.5	29.82	757.4	77	25.0	76	SW	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	28.81	731.8	29.49	749.0	66	18.9	84	S	24	10.7	.....	.....	10ks	.....	SW	0.92	23.4	Cloudy	
Mobile, Alabama	30.06	763.5	30.10	764.5	73	22.8	87	SE	8	3.6	.....	0	8s	.....	SW	0	0	Fair	
Montgomery, Alabama	29.92	760.0	30.15	765.8	65	18.3	83	SE	6	2.7	.....	.....	10s	.....	SE	0	0	Cloudy	
Morgantown, West Virginia	29.66	738.1	30.10	764.5	57	13.9	81	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Mt. Washington, N. H.	23.97	608.8	30.23	767.8	46	7.8	100	NW	30	13.4	.....	.....	Fog	.....	NW	0.03	0.8	Foggy	
Nashville, Tennessee	29.52	749.8	30.04	763.0	67	19.4	64	SE	6	2.7	.....	5c	0	SW	.....	0	0	Fair	
New Haven, Connecticut	30.04	763.0	30.15	765.8	62	16.7	89	SW	2	0.9	.....	5ck	Haze	W	Calm	0	0	Fair	
New London, Connecticut	30.11	764.8	30.16	766.1	62	16.7	94	SW	10	4.5	.....	0	5s	.....	SW	0	0	Fair	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	73	22.8	76	SE	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	30.10	764.5	30.16	766.1	61	16.1	88	SW	5	2.2	.....	.....	10ks	.....	SW	0	0	Threatening	
New York, New York	29.99	761.7	30.17	766.3	58	14.4	87	SW	8	3.6	.....	2ck	2s	W	Calm	0	0	Fair	
Norfolk, Virginia	30.20	767.1	30.26	768.6	61	16.1	88	SW	6	2.7	.....	0	Hz';sm	.....	.....	0	0	Clear	
North Platte, Nebraska	26.94	684.3	29.51	749.5	40	4.4	73	NW	24	10.7	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Olympia, Washington Ter.	30.13	765.3	30.17	766.3	45	7.2	84	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.41	721.6	29.45	748.0	50	10.0	79	W	10	4.5	.....	2c	2s	W	Calm	0.18	4.6	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	29.70	754.4	30.01	762.2	65	18.3	84	S	6	2.7	.....	9c	0	SW	.....	0	0	Fair	
Pembina, Dakota	28.38	720.8	29.21	741.9	33	0.6	100	N	18	8.0	.....	.....	10n	.....	Calm	2.37	60.2	Sleeting	
Philadelphia, Pa	30.12	765.0	30.17	766.3	61	16.1	82	SW	9	4.0	.....	1ck	Fog	Calm	Calm	0	0	Clear	
Phœnix, Arizona	28.87	733.3	.....	.....	52	11.1	66	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.50	444.5	29.71	754.6	— 4	—20.0	28	NW	8	3.6	.....	0	0	.....	.....	0.14	3.6	Clear	
Pioche, Nevada	24.10	612.4	29.90	761.0	27	— 2.8	64	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.29	744.0	30.08	764.0	62	16.7	77	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Port Huron, Michigan	29.18	741.2	29.81	757.2	65	18.3	78	S	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.04	763.0	30.10	764.5	55	12.8	87	SW	4	1.8	.....	0	0	.....	.....	0.04	1.0	Clear	
Portland, Oregon	30.24	768.1	30.34	770.6	44	6.7	92	SE	3	1.3	.....	8k	Fog	NW	.....	Inap.	Inap.	Cloudy	
Prescott, Arizona	24.56	631.4	30.22	767.6	29	— 1.7	56	Calm	0	0	.....	10ck	Fog	W	SE	Inap.	Inap.	Cloudy	
Pilot Point, Texas	28.98	736.1	29.76	755.9	74	23.3	81	SE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.11	764.8	30.13	765.3	72	22.2	78	NE	10	4.5	.....	Haze	Haze	.....	.....	0	0	Hazy	
Red Bluff, California	29.82	757.4	30.19	766.8	47	8.3	77	N	4	1.8	.....	5k	0	NE	.....	0	0	Fair	
Rio Grande City, Texas	29.68	753.6	29.84	757.9	79	26.1	78	SE	.....	.....	2	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.38	746.2	29.97	761.2	68	20.0	70	SW	7	3.1	.....	.....	10ks	.....	SE	0	0	Cloudy	
Roseburg, Oregon	29.77	756.1	30.36	771.1	36	2.2	100	E	2	0.9	.....	2ck	Sm'e	Calm	Calm	0.05	1.3	Fair	
Sacramento, California	30.11	764.8	30.20	767.1	46	7.2	84	N	3	1.3	.....	.....	Fog	.....	Calm	0.11	0.3	Foggy	
St. Louis, Missouri	29.14	740.1	29.68	753.9	73	22.8	72	S	20	8.9	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.16	766.1	30.17	766.3	65	18.3	89	SE	4	1.8	.....	.....	10s	.....	S	Inap.	Inap.	Cloudy	
St. Paul, Minnesota	28.42	721.9	29.19	741.4	54	12.2	79	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	28.85	656.6	30.18	766.6	34.0	1.1	79	E	3	1.3	.....	.....	10s	.....	W	0.36	9.1	Cloudy	
San Antonio, Texas	29.14	740.1	29.69	754.1	78	25.6	82	SE	5	2.2	.....	5k	0	W	.....	1.00	25.4	Fair	
San Diego, California	29.93	760.2	30.00	762.0	54	12.2	93	NE	2	0.9	.....	.....	10ks	.....	SE	0	0	Threatening	
Sandusky, Ohio	29.26	743.2	29.90	759.4	65	18.3	68	SW	21	9.4	.....	0	0	.....	.....	0.90	22.9	Clear	
Sandy Hook, New Jersey	30.12	765.0	30.16	766.1	62	16.7	88	SW	8	3.6	.....	5ck	0	W	.....	Inap.	Inap.	Fair	
San Francisco, California	30.09	764.3	30.16	766.1	54	12.2	80	NW	4	1.8	.....	8ck	Haze	W	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.17	588.5	29.71	754.6	29	— 1.7	34	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.14	765.5	30.23	767.8	67	19.4	95	SE	3	1.3	.....	.....	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.67	753.6	29.88	758.9	73	22.8	90	S	4	1.8	.....	.....	10ks	.....	SE	0	0	Cloudy	
Silver City, New Mexico	24.26	616.2	.....	.....	45	7.2	60	SW	1	0.4	.....	.....	10s	.....	S	0	0	Cloudy	
Smithville, North Carolina	30.25	768.3	30.29	769.4	68	20.0	95	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.01	762.2	30.14	765.5	57	13.9	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	29.88	682.7	29.88	758.9	53	11.7	54	SW	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Thatcher's Island, Mass	30.08	764.0	30.13	765.3	58	14.4	94	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.19	741.4	29.84	757.9	66	18.9	69	SE	18	8.0	.....	8ck	2s	SW	SW	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	64	17.5	45	S	4	1.8	.....	5ck	0	NW	.....	0.01	0.3	Fair	
Tybee Island, Georgia	30.18	766.6	30.22	767.6	72	22.2	90	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.95	760.7	.....	.....	38.0	3.3	81	SE	6	2.7	.....	0	8ks	.....	SE	0	0	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	35	1.7	100	SW	.....	.....	4	.....	8s	.....	Calm	0	0	Cloudy	
Uvalde, Texas	28.98	734.8	29.71	754.6	76	24.4	82	E	8	3.6	.....	.....	10s	.....	SW	0.11	2.8	Cloudy	
Vicksburg, Mississippi	29.75	755.6	30.00	762.0	73	22.8	76	S	10	4.5	.....	0	5s	.....	E	0	0	Cloudy	
Virginia City, Montana	24.31	617.5	29.79	756.7	27	— 2.8	76	NW	6	2.7	.....	.....	10s	.....	S	0	0	Fair	
Visalia, California	29.81	757.2	30.20	767.1	42	5.6	91	Calm	0	0	.....	0	0	.....	Calm	0.01	0.3	Cloudy	
Washington, D. C	30.05	763.3	30.17	766.3	60	15.6	82	SW	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	42	5.6	66	NE	.....	.....	1	0	0	.....	Calm	0	0	Clear	
Wilmington, N. Carolina	30.18	766.6	30.26	768.6	65	18.3	89	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.89	657.6	30.25	768.3	24	— 4.4	61	N	4	1.8	.....	0	0	.....	Calm	0	0	Clear	
Wood's Holl, Mass	30.12	765.0	30.17	766.3	62	16.7	88	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.27	718.0	29.53	750.0	44	6.7	68	NW	24	10.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.85	758.2	30.02	762.5	67	19.4	56	NE	15	6.7	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	30.07	763.8	30.12	765.0	28.0	— 2.2	94	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.99	761.7	30.01	762.2	77	25.0	76	E	3.6	1.6	.....	0	2ks	.....	NE	0	0	Fair	Chas. Hasselbrink.
Santiago de Cuba, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	83	28.3	87	NE	4	1.8	.....	2c	5ks	E	.....	0.38	9.7	Clear	G. O. Gellich.
Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	77	25.0	95	N	3	1.3	.....	2c	8n	Calm	.....	0.24	6.1	.....	James Gall.
Navassa, W. I	29.82	757.4	29.90	759.4	80	26.7	.....	NE	12.9	5.8	.....	.....	.....	.....	.....	0.06	1.5	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	84	28.9	75	NE	.....	.....	2	4c	5k	E	.....	0.100	2.54	Fair	C. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	66.0	18.9	78	Calm	0	0	.....	7cs	3ks	.....	.....	0.12	3.0	.....	Thomas Herran.
Portland, Jamaica, W. I	29.75	755.6	30.06	763.5	72	22.2	100	E	.....	.....	.....	.....	n	.....	.....	Blank	Blank	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,100 (?) ft., or 335.3 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.87 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.25	768.3	77	25.0	77.5	25.3	77	SE	24	10.7	.....	.....	8	.....	SE	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.06‡	763.5‡	.....	.....	56	13.3	87	SW	2	0.9	.....	.....	5	.....	.....	0	0	.....	.....	Misty	
Naval Hospital, Yokohama, Japan	30.21*	767.3*	60.5	15.8	55.2	12.9	87	NNE	.....	.....	4	.....	0	.....	.....	0	0	.....	.....	Clear	
Adams. Valparaiso, Chili	30.19	766.8	62	16.7	59	15.0	82	NW	.....	.....	1	.....	5	.....	NW	.....	.....	Smooth	NW	Fair	
Alaska, S. 15° 41′ W. 76° 41′	30.15	765.8	67	19.4	65	18.3	73	ESE	.....	.....	5	.....	10	.....	SE	0	0	Long	SE	D. clouds	
Alliance, Smyrna, Turkey	30.07‡	763.6‡	.....	.....	73	22.8	63	W	.....	.....	2-3	.....	2	.....	W	.....	.....	.....	.....	Hazy	
Arhuelot. Nagasaki, Japan	30.18	766.6	65	18.3	68	20.0	84	NE	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
Canonicus, New Orleans, La	30.02	762.5	63	11.7	61	16.1	87	E	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	Clear	
Colorado, New York, N. Y.	30.18‡	766.6‡	.....	.....	60	15.6	88	S	6	2.7	.....	.....	2	.....	NNW	0	0	.....	.....	Hazy	
Constitution, Havre, France	.....	.....	.....	.....	58	14.4	88	NE	.....	.....	1	.....	5	.....	Calm	.....	.....	.....	.....	Fair	
Despatch, Constantinople, Turkey	30.10‡	764.5‡	.....	.....	70	21.1	90	SSE	.....	.....	1	.....	8	.....	S	.....	.....	.....	.....	Fair	
Essex, S. 36° 46′, E. 8° 15′	29.92	760.0	59	15.0	51	10.6	93	S	.....	.....	6	.....	8	.....	SW	.....	.....	Rough	S	Cloudy	
Franklin, Norfolk, Va.	30.33	770.4	66	18.9	63	17.2	??	WSW	4	1.8	.....	.....	2	.....	Calm	0	0	.....	.....	Clear	
Gettysburg Port Said, Egypt	29.86‡	758.4‡	.....	.....	82	27.8	100	NE	.....	.....	3	.....	7	.....	Calm	0	0	Light	SW	Pleasant	
Guard. N. 2° 39′, W. 39° 06′	30.03	762.7	84	28.9	82	27.8	75	E	....	.....	3	.....	2	.....	E	.....	.....	Mod'ate	E	Clear	
Hartford, Santos, Brazil	30.11	764.8	73	22.8	72	22.2	85	Calm	0	0	.....	.....	10	.....	.....	0	0	Smooth	.....	Overcast	
Marion, Trieste, Austria	30.09	764.3	65	18.3	63	17.2	89	NW	.....	.....	1	.....	0	.....	.....	Mod'ate	Mod'ate	.....	.....	Clear	
Michigan, Buffalo, N. Y.	29.93†	760.2†	.....	.....	65	18.3	78	SSE	.....	.....	5	.....	5	.....	SSE	.....	.....	.....	.....	Cloudy	
Monocacy, Yokohama, Japan	30.27‡	768.8‡	.....	.....	56	13.3	87	N	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
New Hampshire, Port Royal, S. C.	30.40	772.1	74	23.3	73	22.8	90	ENE	6	2.7	.....	.....	5	.....	SSE	0	0	.....	.....	Cloudy	
Onward, Callao, Peru	30.11†	764.8†	.....	.....	61	16.1	88	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.17	766.3	55	12.8	50	10.0	93	WNW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Light mist	
Passaic, Washington, D. C.	.....	.....	.....	.....	59	15.0	100	SW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. N. 24° 29′, W. 62° 35′	30.10	764.5	80	26.7	79	26.1	74	ENE	.....	.....	3	.....	10	.....	N;E	.....	.....	Light	E	Cloudy	
Powhatan, Boston, Mass.	30.11‡	764.8‡	.....	.....	61	16.1	88	SW	3.6	1.6	.....	.....	8	.....	SW	0	0	.....	.....	Cloudy	
Quinnebang, League Island, Pa.	30.15‡	765.8‡	.....	.....	61	16.1	88	SSW	.....	.....	1	.....	2	.....	SW	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China	30.11	764.8	80	26.7	79	26.1	82	NE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas	29.82	757.4	80	26.7	80	26.7	91	SE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md.	30.11‡	764.8‡	.....	.....	63	17.2	78	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Saratoga, Philadelphia, Pa.	30.06	763.5	.....	.....	57	13.9	87	S	.....	.....	2	.....	4	.....	.....	0	0	.....	.....	Misty	
St. Louis, League Island, Pa	30.05	763.3	63	17.2	62	16.7	83	SW	8	3.6	.....	.....	2	.....	NE	0	0	.....	.....	Fair	
Supply, Havre, France	30.10	764.5	62	16.7	62	16.7	72	ESE	.....	.....	0-1	.....	2	.....	ESE	.....	.....	.....	.....	Clear	
Swatara, Boston, Mass.	30.12‡	765.0‡	.....	.....	62	16.7	83	SW	.....	.....	1	.....	10	.....	SW	.....	.....	.....	.....	Hazy	
Trenton, Villafranca, France	29.71‡	754.6‡	.....	.....	71	21.7	85	Calm	.....	.....	0	.....	2	.....	.....	0	0	Smooth	.....	Clear	
Vandalia, Gibraltar	30.00‡	762.0‡	.....	.....	65	18.3	68	S	.....	.....	2	.....	2	.....	WSW	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass.	.....	.....	.....	.....	61	16.1	88	SW	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.			Force.	Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.			Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 34° 29′, E. 162° 14′		30.04*	763.0*	65	18.3	100	SSW			0		7		SSW	Heavy	Mod'ate	W	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 15° 14′, W. 96° 32′		29.91*	759.7*	83	28.3	96	W			2		7		E	Blank	Mod'ate	SSW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		30.12*	765.0*	63	11.7	80	Calm			0		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic N. 42° 48′, W. 48° 50′		30.21*	767.8*	50	10.0	??	NNW			3				NW	0	Mod'ate	NE	D. clouds	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic, N. 45° 32′, W. 51° 17′		29.58*	751.3*	47	8.3	??	WNW			6				N	6 hours	Strong	NW	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Unddtech.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.15*	765.8*	64	17.8	94	SSW			1		0			0			Fine	Captain Sargent.
S. S. Ohio, Liverpool		30.04	763.0	54	12.2	93	SSE			1		10		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, N. 11° 00', W. 67° 10'		29.83	757.7	86	30.0	76	SW	5	2.2		2c	2k	Calm	Calm	0	Swell	NE	Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 17, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			29.03	760.2	65.5	18.6	90	Calm			0					0.016	0.4	Very cloudy	Kœxuche.
Algiers			29.04	760.4	72.3	22.4	74	ESE			1		10			0	0	Covered	Tourlière.
La Calle			29.05	760.6	63.8	28.5	58	NE			1		6			0	0	Cloudy	Foufrede.
Tunis			30.04	762.9	78.4	25.8	76	ENE			4		9			0	0	Covered	Jacques.
Sfax			30.10	764.5	80.6	27.0		ENE			1		1			0	0	Very fair	Gau.
Saida			29.94	760.5	66.9	19.4	68	SE			7		9			0.217	5.5	Covered	Herbin.
Tebessa			30.03	762.7	81.3	27.4	31	SSW			3		2			0	0	Fair	Watrin.
Geriville			29.91	759.6	73.4	23.0	40	SSE			8		10			0.276	7.0	Covered	Brugniaux.
Laghouat			30.06	763.4	75.2	24.0	46	S			1		4			0.236	6.0	Cloudy	Bertrand.
Biskra			29.99	761.8	91.4	33.0	28	SE			5		2			0	0	Fair	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.51	749.6	30.06	763.5	58.3	14.6	85	NE			1		4			0.012	0.3		Prof. Ivan Stožir.
Cracow, I. R. Observatory	29.29	744.0	30.07	763.6	51.4	10.8	98	WSW			1		10			1.643	39.2		Dr. Wierzbiski
Eperies	29.16	740.6	30.03	762.8	57.2	14.0	92	Calm			0		10ns		N	1.551	39.40		Julius Mikolik.
Gratz	28.80	731.4	30.03	762.8	58.5	14.7	84	SSW			2		6			0.002	0.05		Andreas Rospini.
Hermannstadt	28.62	727.0	30.10	764.6	56.8	13.8	83	SSW			1		5			0.236	6.00		Prof. A. Gottschling.
Kremsmünster	28.68	728.4	30.03	762.7	50.2	10.1	95	Calm			0		10			0	0		Prof. C. Wagner.
Lemberg	29.07	738.4	30.07	763.6	54.3	12.4	90	SE			2		10			0	0		Dr. T. Stanecki.
Pola	29.07	761.3	30.00	764.2	63.3	17.4	78	NW			1		8ck			0	0		I.R.Hydrographic Office.
Szathmar	29.65	753.1	30.11	764.7	62.2	16.8	76	SE			3		7			0.091	2.3		Julius Csics, S. J.
Szegedin	29.78	756.5	30.06	763.5	63.0	17.2	68	Calm			0		6			0	0		Karl Stancel.
Trieste	30.00	762.1	30.11	764.7	61.3	16.3	80	NW			1		2			0	0		P. Busin.
Vienna	29.32	744.8	30.03	762.8	59.9	15.5	76	ENE			1		8			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.51	724.2	30.02	762.5	52.3	11.3	78	E			1		10			0	0		Prof. M. Passau.
Brussels	29.81	757.2	30.01	762.3	50.9	10.5	96	E			1		10			0	0	Foggy	Royal Observatory
Furnes	30.02	762.4	30.04	763.0	54.0	12.2	88	SSW			2		10			0	0	Foggy	M. E. de Cae
Maeseyck	29.91	759.7	30.04	763.0	54.7	12.6	85	E			2		10			0	0		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.74	755.4	29.84	757.9	55.0	12.8	.....	SSE	22	9.8	.....	.....	8	.....	.....	0	0	Overcast	W. Boswell.
Ardrossan	29.85	758.2	29.86	758.4	57	13 9	.....	SSW	.....	.....	3	.....	4	.....	.....	.....	.....	Overcast	George Carrick.
Armagh, Observatory	.....	.....	29.88	758.9	56.0	13.3	.....	S	13	5.8	.....	.....	10	.....	.....	.....	.....	Overcast	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.96	761.0	56.3	13.5	.....	SE	7	3.1	.....	.....	3	.....	.....	.....	.....	Misty	John Harinup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.56	750.8	29.96	761.0	58.0	14.4	.....	W	.....	.....	1	.....	3	.....	.....	0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.86	758.4	29.89	759.2	84.5	29.2	.....	NE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.98	761.5	58.0	14.4	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Foggy	H. Todd. (H. C.
Cardington	.....	.....	30.00	762 0	54.0	12.2	.....	S	.....	.....	0	.....	10	.....	.....	.....	.....	Foggy	John McLaren.
Chatham, School M. E.	29.87	758.7	30.00	762.0	56.2	13.4	.....	Calm	.....	.....	0	.....	9	.....	.....	.....	.....	Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.44	722.4	29.90	759.4	57.0	13.9	.....	E	.....	.....	3	.....	6	.....	.....	.....	.....	Fine	Alexander Watt.
Donaghadee	29.86	758.4	29.88	758.9	58	14.4	.....	S	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.96	761.0	29.98	761.5	57	13.9	.....	S	.....	.....	1	.....	7	.....	.....	.....	.....	Misty	J. Costello.
Falmouth, Observatory	29.70	754.4	29.93	760.2	59.7	15.4	.....	ESE	.....	.....	3	.....	3	.....	.....	.....	.....	Misty	The Staff.
Fort Napier, (Natal)	27.21	691.1	29.53	750.0	81.6	27.6	.....	N	.....	.....	2	.....	1	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.66	753.4	29.88	758.9	87	30.6	.....	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	29.79	756.7	57	13.9	.....	S	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.83	757.7	29.88	758.9	.....	.....	.....	W	.....	.....	4	.....	1	.....	.....	.....	.....	Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.66	753.4	29.87	758.7	57.9	14.4	.....	SW	.....	.....	2	.....	10	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	30.00	762.0	30.00	762.0	56	13.3	.....	S	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast	G. T. Watson.
Greenwich, Royal Obs'y	29.81	757.2	29.98	761.5	54 2	12.3	.....	NE	.....	.....	1	.....	6	.....	.....	.....	.....	Foggy	The Staff, for G. B. Airy.
Guernsey	29.68	753.9	29.90	759.4	62.5	16.9	.....	ENE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.95	760.7	63	17.2	.....	E	.....	.....	1	.....	ck	.....	.....	0	0	Fine	M. P. Moyle.
Holyhead	29.89	759.2	29.94	760.5	58	14.4	.....	S	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky	John Tilston.
Jersy	29.66	753.4	29.94	760.5	64.0	17.8	.....	SE	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky	J. Fisher.
Kew, Observatory	29.95	760.7	29.99	761.7	53.6	12.0	.....	E	1	0.4	.....	.....	.....	.....	.....	.....	.....	Foggy	The Staff.
Kingstown	29.91	759.7	29.94	760.5	58	14.4	.....	S	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	George Mitchell.
Leicester, Museum	.....	.....	29.98	761.5	55.0	12.8	.....	SW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.98	761.5	75.4	24.1	.....	E	.....	.....	2	.....	1k	.....	.....	.....	.....	Blue sky	Sergt. Beckett.
Nairn	29.68	753.9	29.77	756.1	54	12 2	.....	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.99	761.7	77.5	25.3	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.81	757.2	30.00	762.0	56.2	13.4	.....	Calm	.....	.....	0	.....	2c;s	.....	NNE	0.001	0.03	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.45	748 0	29.97	761.2	57.0	13.9	.....	SE	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	30.00	762.0	50	10.0	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Foggy	H.E. Bellamy.
Plymouth	29.86	758.4	29.93	760.2	61.0	16.1	.....	SE	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	John Merrifield.
Roche's Point	29.88	758.9	29.92	760.0	59	15.0	.....	SW	.....	.....	4	.....	5	.....	.....	.....	.....	Cloudy	W. Kennedy.
Saint Ann's Head	29.78	756.4	29.94	760.5	58	14.4	.....	SE	.....	.....	2	.....	2	.....	.....	.....	.....	Blue sky	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.73	755.1	56.5	13.6	.....	S	17	7.6	.....	.....	1	.....	.....	.....	.....	Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.02	762.5	67.6	19.8	.....	SW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky	Sergt. W. H. Lyne.
Sheffield	29.69	754.1	29.97	761.2	60.7	15.9	.....	SW	.....	.....	1	.....	2	.....	.....	0	0	Blue sky	W. F. Cooper.
Silloth, Rectory	29.90	759.4	29.92	760.0	61.3	16.3	77	W	.....	.....	2	.....	5	.....	.....	0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.67	751.1	29.97	761.2	56.0	13.3	.....	SE	.....	.....	0	.....	.....	.....	.....	.....	.....	Misty	Rev. S. J. Perry.
Stornoway, Lews C., (Hebr.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Sutherland.
Stratfield Turgiss	29.80	756.9	30.01	762.2	57.0	13.9	.....	E	.....	.....	0-1	.....	9	.....	.....	.....	.....	Foggy	Rev. C. H. Griffith, F.M.S.
Thurso	29.67	753.6	29.73	755.1	57	13.9	.....	SSE	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast	John Trotter.
Truro, Royal Institution	.....	.....	29.94	760.5	54	17.8	.....	SE	.....	.....	6	.....	4	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	29.81	757.2	29.83	757.7	59.6	15.3	.....	SSE	21	9.4	.....	.....	7	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.64	752.8	50.0	10.0	76	NW	.....	.....	3	.....	5k	.....	.....	0.02	0.5	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.4	76.6	24.8	62	ENE	12.5	5.6	.....	0	2	.....	E	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.88	758.9	29.97	761.2	51.0	10.6	69	SW	15	6.7	.....	.....	8	.....	.....	0.02	0.5	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m., Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES.

VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 42° 30', W. 53° 45'	.....	.....	30.29	769.4	66	18.9	.....	WSW	.....	.....	3	.....	7	.....	.....	4	.....	D. clouds	Capt. Alex. Wilson.
Barque Commewyne, N. 15° 25', W. 51° 5'	.....	.....	29.84	757.9	83	28.3	.....	WSW	.....	.....	6	.....	8	.....	.....	4	Confused.	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 21° 40', W. 59° 25'	.....	.....	29.95	760.7	82	27.8	.....	.....	.....	.....	4	.....	5	.....	.....	7	NE	Squally	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.24	666.5	29.96	761.0	67.1	19.5	98	NW	.....	.....	1	.....	2s	.....	N	0.1	2.5	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.02	762.6	30.07	763.8	52.0	11.1	81	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	.....	
Fanöe	30.01	762.3	30.03	762.8	54.3	12.4	93	WSW	.....	.....	2	.....	9	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Farõe)	29.27	743.4	29.30	744.3	50.5	10.3	96	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining	
Vestervig	29.59	759.1	30.06	763.4	52.5	11.4	98	SE	.....	.....	2	.....	8	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.47	748.5	30.02	762.5	56.1	13.4	88	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Collignon, Director.
Amiens, Normal School	29.95	760.8	30.06	763.5	62.2	16.8	73	E	.....	.....	2	.....	5	.....	N	0	0	Cloudy	Ronvallet, Director.
Avignon, Normal School	29.96	760.9	30.04	762.9	68.5	20.3	69	NNW	.....	.....	1	.....	5	.....	S	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.40	746.8	29.95	760.7	61.3	16.3	73	NE	.....	.....	2	.....	5ck	.....	.....	0	0	Cloudy	C. Saillard.
Beauvais, Normal School	29.74	755.4	30.03	762.8	52.5	11.4	83	ESE	.....	.....	1	.....	10	.....	.....	0	0	Covered	Frere Eugene Marie, Director.
Besançon	29.15	740.4	30.03	762.7	61.3	16.3	70	E	.....	.....	2	.....	2	.....	SW	0	0	Slightly cl'dy	Normal School.
Bourg-en-Bresse, N. School	29.16	740.7	30.08	763.9	68.5	20.3	57	S	.....	.....	4	5c	.....	S	.....	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.38	746.3	29.93	760.3	55.4	13.0	96	ENE	.....	.....	2	.....	1	.....	ENE	0	0	Clear	A. Wagner, Director.
Brest, Naval Observatory	29.67	751.0	29.81	757.2	73.0	22.8	66	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	The Staff.
Carcassonne, Normal School	29.53	750.1	29.93	760.3	66.2	19	72	W	.....	.....	3	.....	8	SW	E	0.16	4.	Very cloudy	Septembre, Director.
Caen	29.85	758.1	29.92	759.9	64.0	17.8	76	N	.....	.....	2	.....	0	.....	.....	0	0	Clear	M. Lair, Director.
Chartres, Normal School	29.35	745.6	29.92	759.9	59.0	15	82	NE	.....	.....	1	.....	8	.....	SW	0	0	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.09	764.0	30.01	762.2	61.1	10.6	95	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.57	725.6	29.87	758.8	69.1	20.6	61	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	Alluard, Director.
Commercy, Normal School	29.14	740.1	30.03	762.7	50.9	10.5	90	E	.....	.....	1	.....	kn	.....	E	0	0	.....	Dr. Coulet, Director.
Commune de Grèasque*	28.93	734.7	30.07	763.7	63.9	17.7	67	W	.....	.....	1	.....	5	.....	SW	0	0	½ covered	M. Kina.
Grenoble, Normal School	29.19	741.4	29.95	760.6	61.9	16.6	61	SSE	.....	.....	1	.....	5cs	.....	S	0	0	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.67	753.5	29.87	758.8	69.1	20.6	75	ENE	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.65	753.1	29.95	760.8	60.4	15.8	71	SE	.....	.....	1	.....	2	.....	ENE	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.09	738.8	29.98	761.6	64.0	17.8	83	NW	.....	.....	1	.....	2	.....	W	0	0	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	29.77	756.2	29.87	758.7	69.8	21.0	62	E	.....	.....	2	.....	.....	.....	NE	0	0	.....	T. Carré, Director.
Mâcon, Normal School	30.08	764.1	30.11	764.9	59.7	15.4	87	S	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	28.95	735.3	29.98	761.5	61.9	16.6	80	N	.....	.....	1	.....	8s	.....	S	0	0	Partly cov'd	M. Barbier, Director.
Nismes Normal School	29.82	757.3	30.01	762.3	75.9	24.4	57	SE	.....	.....	1	.....	5	.....	N	0	0	Cloudy	Boyer, Director.
Orleans	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Privas, Normal School	28.95	735.2	30.00	761.9	61.3	16.3	77	SW	.....	.....	1	.....	1	SW	SW	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.18	639.6	.....	.....	58.3	14.6	90	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Allnard, Director.
Rochefort, Naval Obs'y	29.84	757.9	29.87	758.7	69.3	20.7	76	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.01	769.8	30.00	762.0	55.9	13.2	79	SE	.....	.....	1	.....	10	.....	SE	0	0	Covered	F. Lucard, Director.
Saint Malo (Port)	.....	.....	29.91	759.6	68.9	20.5	66	SE	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.83	757.7	30.00	761.9	52.3	11.3	88	N	.....	.....	1	.....	10	.....	NE	0	0	Covered	E. Renou.
Tarbes, Normal School	28.89	733.9	29.95	760.8	64.4	18	71	SW	.....	.....	2	.....	10	.....	.....	0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.33	745.0	30.02	762.6	69.6	20.9	60	NW	.....	.....	1	.....	2	.....	S	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.73	755.1	29.76	755.8	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchès.
Lyons, Observatory	.....	.....	29.82	757.3	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	0	0	.....	
Marseilles, Observatory	.....	.....	30.01	762.2	72.5	22.5	60	W	.....	.....	0–1	.....	8	.....	.....	0	0	Very cloudy	The Staff.
Mont-Louis	24.91	632.8	30.23	767.8	55.4	13.0	38	SW	.....	.....	4	.....	4	.....	SE	0	0	.....	M. Cave.
Nice	.....	.....	30.10	764.4	66.2	19.0	84	E	.....	.....	1	.....	10	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.71	754.6	29.98	761.6	52.2	11.2	93	ESE	.....	.....	1	.....	8	.....	.....	0	0	.....	Marié Davy, Director
Perpignan	.....	.....	29.99	761.8	66.7	19.3	78	SE	11.2	5.00	.....	.....	10	.....	.....	0.020	0.5	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Bayhac.
Pic du Midi, (Plantade,) H. P.	22.48	571.0	.....	.....	39.2	4.0	.....	SSW	.....	.....	1	.....	10	.....	.....	0.315	8.0	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.18	741.2	29.90	759.5	67.8	19.9	61	SE	.....	.....	6	.....	9	.....	.....	0.040	1.25	.....	B. Baillaud.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. Marquet.
Versailles	.....	.....	29.98	761.6	55.0	12.8	68	SE	.....	.....	1	.....	0	.....	.....	0	0	Light fog	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.19	766.8	30.21	767.4	59.9	15.5	99	SSE	3.6	1.6	.....	.....	10n	.....	.....	0.244	6.2	Raining	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Sumuit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhöen.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.15	740.3	29.99	761.7	51.4	10.8	93	W			1		10			0	0		Prof. Dr. Hoh.
Berlin	29.88	759.0	30.06	763.4	56.8	13.8	78	SE			1		8			0	0		Prof. Arndt.
Breslau	29.53	750.1	30.07	763.6	54.3	12.4	83	W			1		10			0.015	0.38		Royal University Obs'y
Carlsruhe	29.57	751.0	30.00	762.0	52.2	11.2	91	S			1		10			0	0		Albert Senz.
Cassel	29.38	746.2	29.98	761.6	52.5	11.4	79	E			2		8	E		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.34	758.0	30.00	762.1	55.4	13.0	72	E			2		9			0	0	Light fog	Director Lose.
Emden	30.17	766.2	30.20	767.1	52.7	11.5	85	S			1		10			0	0		Prof. Prestel.
Frankfort on the Main	29.65	753.1	30.02	762.4	56.8	13.8		N			1		10			Inap.	Inap.		Physical Society:
Friedrichshafen	28.59	726.2	30.03	762.7	54.0	12.2	87	SW			1		0			0	0		M. Wilhelm.
Hamburg	29.97	761.3	30.04	763.1	51.8	11.0	76	E			1		10			0.047	1.2	Rain & fog	Captain F. Hegemann.
Kiel	30.04	762.9	30.05	763.3	53.8	12.1	89	ENE			1		10			0.031	0.81		Prof. G. Karsten.
Königsberg, (Prussia)	30.00	762.0	30.08	764.1	58.6	14.8	75	E			2		4			0	0		Prof. E Luther.
Köslin			30.02	762.4	56.8	13.8		N			2		4			0	0		H. Müller.
Leipsic, Observatory	29.62	752.3	30.04	762.9	57.2	14.0	79	ESE			1		10			0.012	0.3		Prof. Bruhns.
Memel, Naval School	30.09	764.2	30.13	765.4	59.9	15.5	66	SE			2		1cs						Reinbrecht and Skalweit.
Neufahrwasser	30.06	763.5	30.08	763.9	56.8	13.8	90	ENE			3		10			0	0		A. Lothes.
Posen	29.78	756.5	30.07	763.7	54.5	12.5	90	NW			2		10			0.177	4.5		Dr. Magener.
Strassburg (in Alsace)	29.48	748.9	30.04	763.0	53.6	12.0	89	Calm			0		10			0.006	0.14		Astronomical Observatory.
Stuttgart	29.02	737.2	29.95	760.8	59.0	15.0	76	E			1		2	E		0	0	Foggy	Prof. Schoder.
Treves, (Trier)	29.45	748.0	29.97	761.3	57.2	14.0	67	W			2		10			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.51	724.2	30.00	761.9	55.0	12.8	83	SE	2.2	1.0			8ck	NW		0	0		Dr. Von Bebber.
Wustrow, Naval School	30.06	763.5	30.08	764.1	55.0	12.8	91	SE			3		10ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.6 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.66	753.3	30.04	762.9	77.7	25.4		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.38	746.3	29.86	758.1	90.5	32.5	44	Calm					0			0	0	Blue sky	
Bombay	29.73	755.1	29.77	756.0	84.7	29.3	82	NW	11	4.9			10	W		0	0	Overcast	
Poona	27.80	706.0	29.78	756.4	82.6	28.1	51	E					10		E	0.32	8.1	Overcast	
Lahore	29.05	737.8	29.78	756.4	86.0	30.0	49	Calm	1.5	0.7						0	0	Blue sky	
Belgaum	27.28	692.9	29.81	757.1	76.7	24.8	80	NE	1	0.4			9		NE	0.24	6.1	D. clouds	
Roorkee	28.92	734.6	29.82	757.3	83.2	28.4	53	Calm	1	0.4						0	0		
Agra	29.25	742.9	29.80	756.9	92.6	33.7	35	E								0	0		
Nagpur	28.74	730.0	29.77	756.1	86.1	30.1	57	Calm	3.1	1.4			0			0	0	Blue sky	
Lucknow	29.41	747.0	29.78	756.3	86.9	30.5	54	Calm	1.2	0.5						0	0	Blue sky	
Allahabad	29.50	749.3	29.81	757.1	83.1	28.4	67	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.63	752.6	29.81	757.2	84.4	29.1	75	Calm	0.4	0.2			2	E	E	0	0		
Hazaribagh	27.81	706.4	29.82	757.3	79.6	26.4	78	ESE	5.0	2.2			9	SW	NE	0.39	9.9	Drizzling	
Cuttack	29.75	755.6	29.83	757.7	81.0	27.2	78	S	1.7	0.8			3			0	0	D. clouds	
Calcutta (Allpore)	29.80	756.8	29.82	757.3	80.7	27.1	83	N	5.0	2.2			7					Thunder-storm	
Goalpara	29.39	746.6	29.78	756.4	82.9	28.3	69	Calm	1.6	0.7			0			0	0	Blue sky	
Chittagong	29.73	755.2	29.82	757.5	81.9	27.7	87	Calm	1.7	0.8			4			0	0	Misty	
Sibsagar	29.46	748.4	29.80	756.8	84.3	29.1	69	SSE	1.6	0.7			4			0	0	Blue sky	
Jubbulpore	28.42	722.0	29.78	756.4	82.8	28.2	54	E	2.2	1.0			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.70	754.4	30.11	764.8	61.5	16.4	72	Calm	0	0	.....	.....	6	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.99	761.8	30.10	764.6	62.6	17.0	72	N	0.7	0.3	.....	.....	8	W	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.91	759.7	30.10	764.6	64.0	17.8	69	SE	1.3	0.6	.....	.....	9	N	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.58	751.4	30.10	764.6	58.3	14.6	83	W	.....	.....	2	.....	8	W	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.21	741.9	30.11	764.8	57.6	14.2	89	SSE	2.5	1.1	.....	.....	9	N	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.20	716.3	30.11	764.7	55.8	13.2	84	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.87	758.6	30.09	764.2	66.4	19.1	59	E	.....	.....	4	.....	6	E	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.91	759.6	30.08	763.9	67.6	19.8	53	Calm	0	0	.....	.....	4	S	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.81	757.1	30.13	765.2	59.9	15.5	85	N	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.82	757.4	30.08	763.9	67.6	19.8	59	NE	.....	.....	2	.....	6	W	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.97	761.1	30.05	763.2	68.0	20.0	68	SW	3.9	1.7	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	30.05	763.3	30.10	764.5	62.8	17.1	85	NW	4.9	2.2	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.68	728.8	30.12	765.0	58.3	14.6	89	NE	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.89	759.2	30.07	763.6	72.0	22.2	67	W	1.8	0.8	.....	.....	3	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.90	759.4	30.10	764.5	75.2	24.0	60	SW	.....	.....	1	.....	2	W	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.87	758.6	30.12	765.0	69.1	20.6	66	NNW	8.7	3.9	.....	.....	8	N	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.83	757.6	30.02	762.4	74.8	23.8	56	SE	.....	.....	2	.....	8	NW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.22	742.1	30.03	764.2	72.7	22.6	73	NW	1.8	0.6	.....	.....	0	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.84	757.9	30.09	764.2	72.0	22.2	77	ENE	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.02	762.6	30.10	764.4	72.5	22.5	83	SE	6.3	2.8	.....	.....	9	S	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.96	761.0	30.16	766.0	66.6	20.0	82	NE	1.1	0.5	.....	.....	10	.....	.....	0.257	6.53	Covered	I. Arai, Director.
Tokei (Yeddo) Observatory	30.35	770.9	30.42	772.6	53.9	12.2	89	NE	4.4	2.0	.....	.....	2s	.....	.....	0	0	Fair	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.5	17.5	74	N	.....	.....	3	3cs	0	.....	.....	0	0	Clear.	P. Ceballos.
Guadalajara	25.06	636.5	30.08	764.0	57.2	14.0	69	NE	.....	.....	.....	4	.....	NE	.....	0	0	Clear	Prof. L. Perer.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.42	620.3	29.96	761.0	62.6	17.0	89	SW	.....	.....	1	2c	1k	Calm	Calm	0.906	23.0	Clear	Prof. M. Leal.
Mexico	23.12	587.2	30.11	764.9	54.9	12.7	86	Calm	0	0	.....	0	4k	.....	NE	0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	60.8	16.0	88	NNE	.....	.....	2	0	9n	.....	.....	0.748	19.0	Rainy	M. V. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.85	758.9	29.89	759.2	77	25	91	NNE	.....	.....	1	2	0	NE	.....	0	0	Clear	M, M. Cházaro.
San Luis Potosi	24.07	610.6	29.92	760.1	61.0	16.1	54	NNE	.....	...	.....	0	10	.....	NNE	0.217	5.5	Covered	G. Barroeta, M. D.
Vera-Cruz	29.92	760.0	29.95	760.7	82.4	28.0	77	SE	4.9	2.2	.....	0	7sk	.....	SE	0	0	Cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	52.7	11.5	78	NE	.....	.....	3	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.19	589.2	29.96	761.0	50.0	10.0	85	WNW	1.3	0.6	.....	0	1	.....	Calm	0	0	Almost clear	Prof. P. Spina.
Durango	24.21	614.8	30.02	762.4	64.0	17.8	87	Calm	.....	.....	0	.....	10k	.....	.....	0	0	Covered	M. V. de Leon, C. E.
Colima	28.38	719.5	29.96	761.0	76.6	24.8	88	NE	.....	.....	1	.....	10	.....	.....	0	0	Covered	R. Banda, C. E.
San Juan E. Michapam	29.72	754.9	29.97	758.6	77	25	.....	Calm	.....	.....	0	3ck	5n	.....	N	0	0	Misty	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.04	762.9	30.04	762.9	57.2	14.0	.....	ESE	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Groningen	29.99	761.8	30.05	763.2	51.6	10.9	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	30.03	762.7	30.03	762.7	52.0	11.6	.....	ESE	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	30.00	762.2	30.01	762.2	55.0	12.8	85	E	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	30.00	761.9	30.01	763.1	53.1	11.7	80	E	.....	.....	1	.....	10	.....	.....	0	0	Dull	H. v d Brink
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.95	760.8	30.01	762.2	54.3	12.4	70	S	20.6	9.2	.....	.....	2	.....	.....	0	0	.....	
Brônо	29.78	756.3	29.82	757.3	50.4	10.2	50	SW	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.96	761.0	30.11	764.8	47.3	8.5	98	WSW	2	1	.....	.....	10	.....	.....	0.035	0.9	Light fog....	
Tromsô	29.76	756.0	29.81	757.1	48.9	9.4	59	SSW	20	9	.....	.....	10	.....	.....	0.539	13.7	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.82	757.4	30.01	762.3	63.3	17.4	78	NNW	4.9	2.2	.....	.....	2	.....	.....	0.157	4.0	.....	Dr. J. A. Sampaio.
Campo Major	28.57	733.3	29.89	759.3	66.7	19.3	39	SE	8.1	3.6	.....	.....	4	SSW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.88	759.0	29.97	761.2	70.0	21.1	57	WSW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.50	749.4	29.86	758.5	64.4	18.0	55	S	15.0	6.7	.....	.....	5	SW	.....	0.134	3.4	.....	The Staff.
Ponta Delgada, (Azores)	29.90	759.5	29.97	761.3	65.8	18 8	61	N	18.6	8.3	.....	.....	3	.....	.....	0.331	8.4	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	2	NE	Blue sky.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.59	751.5	30.00	762.1	59.5	15.3	77	SE	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.80	757.0	30.22	767.6	59.5	15.3	48	SE	7	3	.....	.....	2	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	30.01	762.2	30.25	768.3	59.2	15.1	69	S	4	2	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.21	767.4	30.23	767.8	52.0	11.1	79	W	4	2	.....	.....	0	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.64	752.8	30.27	768.8	60.1	15.6	50	SE	7	3	.....	.....	6c;ck	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.16	766.0	30.23	767.8	66.2	19.0	43	ESE	13	6	.....	.....	3s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.20	767.1	30.22	767.6	62.6	17.0	64	ENE	11	5	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.84	758.0	30.40	772.2	52.2	11.2	74	S	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.13	765.2	30.33	770.3	59.2	15.1	43	E	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.98	761.6	30.00	762.1	40.8	4.9	87	W	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.89	733.9	30.30	769.7	64.2	17.8	56	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.53	775.5	30.45	773.4	47.1	8.4	27	ENE	7	3	.....	.....	1s	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Krotkowo*	29.58	756.3	30.26	768.7	37.4	3.0	51	WNW	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.91	759.7	30.19	766.8	38.3	3.5	57	W	4	2	.....	.....	10	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Ekaterinburg	28.34	732.6	29.84	758.0	27.9	— 2.3	49	NW	22	10	.....	.....	1c	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.93	760.2	30.17	766.2	52.5	11.4	71	NNW	9	4	.....	.....	9km	.....	.....	.....	.....	.....	
Tashkend	28.62	726.9	30.36	771.1	50.7	10.4	85	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.27	743.5	29.80	756.9	48.2	9.0	45	SW	9	4	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.60	751.9	29.90	759.4	37.6	3.1	67	S	2	1	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.99	761.7	30.13	765.3	51.8	11.0	62	SW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	30.28	769.1	30.37	771.3	32.4	0.2	89	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.76	756.0	29.87	758.6	68.0	20	82	NE	3.9	1.75	.....	.....	10	.....	.....	1.527	38.76	Thunder.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.80	757.0	29.86	758.4	62.6	17.0	91	NW	1.0	0.44	.....	.....	10	.....	.....	0.039	1.0	Rainy.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.94	684.3	.....	.....	51.8	11.0	86	E	5.3	2.38	.....	.....	10	.....	.....	0.472	12.0	Covered	Domingo Martin y Perez
Madrid, Royal Observatory	27.67	702.9	29.88	758.9	59.2	15.1	73	SW	1.5	0.67	.....	0	9	.....	.....	0.260	6.6	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.69	754.2	29.84	758.0	68.9	20.5	73	E	2.6	1.14	.....	4	5	N	.....	0.587	13.65	Raining	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.93	734.7	29.81	757.1	61.2	16.2	76	SE	1.9	0.83	.....	5	4	.....	.....	0.043	1.1	Almost cov..	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.91	759.6	29.97	761.3	75.2	24.0	80	E	7.4	3.3	.....	0	0	.....	.....	0	0	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.83	757.8	29.93	760.3	66.6	19.2	64	W	6.5	2.9	.....	0	7	.....	W	0.012	0.3	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I	29.80	756.8	29.89	759.1	78.1	25.6	87	SW	0	0	.....	0	2s	0	SE	0.551	14.00	Clear	Leonardo de Tejeda, Ch'f Eng't

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 866 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.4	29.94	760.4	41.0	5.0	.....	.....	.....	.....	.....	.....	10	.....	.....	0	0	.....	
Umea	29.97	761.2	30.02	762.5	46.0	7.8	98	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Hernosand	29.96	760.9	30.01	762.2	49.3	9.6	76	S	.....	.....	8	.....	0	.....	.....	0	0	.....	
Stockholm	29.96	760.9	30.13	765.4	51.3	10.7	92	E	.....	.....	2	.....	10	.....	.....	Inap.	Inap.	Foggy	
Wisby	30.07	763.8	30.13	765.3	56.5	13.6	87	WNW	.....	.....	4	.....	10	.....	.....	0.012	0.3	.....	
Sub-Series.																			
Upsala	30.00	763.4	30.13	765.3	46.9	8.3	95	S	.....	.....	.....	.....	10	.....	.....	0.004	0.09	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.60	726.4	30.02	762.5	56.1	13.4	72	N	.....	.....	2	.....	6	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.41	721.6	30.04	763.1	55.0	12.8	79	NW	.....	.....	1	.....	5	.....	.....	0	0	Foggy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.3 mm.; Thermometer, +0.8 cent.; Relative Humidity, 0 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.09	764.2	67.3	19.6	63	NE	9	4.0	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.18	766.5	71.6	22.0	.....	W	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.95	760.6	86.2	30.1	46	Calm	.....	.....	0	.....	2ck	.....	.....	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.94	760.5	30.01	762.2	49.8	9.9	97	Calm	0	0	.....	.....	10n	.....	.....	0	0	Foggy	Hon. J. Ferguson.
Brockville, Ontario	29.51	749.5	29.80	756.9	67	19.4	.....	S	5	2.2	.....	0	2s	.....	S	0	0	Clear	W. R. Bigg.
*Chatham, N B	29.97	761.2	30.08	762.7	54	12.2	93	SW	2	0.9	.....	.....	Haze	.....	Calm	0	0	Hazy	G. A. Blair.
Charlottetown, P. E. Island.	30.02	762.5	30.06	763.5	57	13.9	88	SW	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.58	751.3	29.76	755.9	62.4	16.9	76	SW	1	0.4	.....	1cs	.....	.....	.....	Inap	Inap.	Clear	James Smith, M. A.
Dalhousie, N. B	29.86	758.4	30.02	762.5	47	8.3	96	E	.....	.....	3	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.02	762.5	30.06	763.5	47.3	8.5	100	Calm	.....	.....	.....	9ck	0	.....	.....	0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.90	759.4	29.92	760.0	41	5.0	92	Calm	0	0	.....	.....	Fog	.....	Calm	0.09	2.3	Foggy	J. McWilliams.
Fredericton, N. B	29.99	761.7	30.05	763.3	54.0	12.2	93	S	5	2.2	.....	.....	10	.....	.....	0	0	Misty	Prof. Harrison.
*Fort Garry Manitoba	29.66	758.1	29.91	759.7	31	— 0.6	97	N	20	8.9	.....	5k	5n	N	N	0.560	14.22	Cloudy	James Stewart.
Granton, Ontario	28.61	726.7	29.68	753.9	59	15.0	.....	W	.....	.....	3	.....	10n	.....	.....	.....	.....	Light rain	James Grant.
*Halifax, N. S	29.97	761.2	30.11	764.8	55	12.8	98	SW	5	2.2	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.36	745.7	29.71	754.6	68.3	20.2	70	SW	.....	.....	4	10ck	0	.....	.....	0.33	8.4	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	30.12	765.0	30.14	765.5	46	7.8	73	NW	.....	.....	2	.....	10	.....	.....	0	0	Overcast	E. Weedon.
*Kingston, Ontario	29.48	748.8	29.81	757.2	63	17.2	78	S	20	8.9	.....	5k	2ks	S	S	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.06	763.5	30.10	764.5	57.4	14.1	95	SW	5	2.2	.....	5k	0	SW	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.63	752.6	29.83	757.7	61	16.1	80	SW	16	7.2	.....	0	2ks	.....	.....	Inap.	Inap.	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	28.94	735.1	29.61	752.1	58	14.4	97	W	18	8.0	.....	.....	10n	.....	W	0.11	2.8	Light rain	Rev. R. Mosley.
Peterboro, Ontario	28.98	736.1	29.70	754.4	64.7	18.2	73	SW	.....	.....	2	3ck	0	.....	.....	0	0	Hazy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.04	737.6	29.71	754.6	64	17.8	83	S	18	8.0	.....	.....	10ks	.....	SW	0	0	Cloudy	H. Morgan.
Port Hastings, N. S	30.03	762.7	30.08	764.0	60.7	15.9	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.08	738.6	29.70	754.4	64	17.8	86	S	10	4.5	.....	.....	10n	.....	SW	Inap.	Inap.	Light rain	M. Payne.
*Quebec, Quebec	29.61	752.1	29.93	760.2	46	7.8	100	Calm	.....	.....	0	Haze	Fog	.....	.....	0.03	0.8	Foggy	Capt. Ashe, R. N
*Rockliffe, Ontario	29.16	740.7	29.60	751.8	66	18.9	73	S	6	2.7	.....	.....	8s	.....	SW	0	0	Fair	W. H. McIntyre.
St. Andrews, N. B	29.99	761.7	30.04	763.0	53	11.7	93	S	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B	29.92	760.0	30.09	764.3	52	11.1	100	SW	.....	.....	.....	.....	Fog	.....	.....	0.04	1.0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	28.96	735.6	29.66	753.4	53	11.7	88	SW	14	6.3	.....	.....	10ks	.....	S	0.12	3.0	Cloudy	K. Stewart.
Stayner, Ontario	28 60	734.0	29.66	753.4	56	13.3	97	NW	3	1.3	.....	.....	10n	.....	SW	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.42	721.9	29.66	753.4	55.3	12.9	91	W	11.0	4.9	.....	.....	10n	.....	.....	.....	.....	Raining	C. J. MacGregor, M.
*Sydney, C. B	30.09	764.3	30.12	765.0	57	13.9	93	SW	7	3.1	.....	2ck	8s	.....	SW	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.33	745.0	29.70	754.4	62	16.7	78	S	4	1.8	.....	.....	10ks	.....	SW	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	30.05	763.3	30.22	767.6	47	8.3	77	W	.....	.....	.....	.....	10	.....	.....	0.01	0.3	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the SECRETARY OF WAR. UNITED STATES SERIES.

Furnished by the coöperation of Byt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.77	756.1	29.99	761.7	59	15.0	82	S	4	1.8		5c	2s	W	W	0	0	Fair	
Alpena, Michigan	28.99	736.3	29.62	752.3	47	8.3	62	W	12	5.4			10s		W	0.83	21.1	Cloudy.	
Atlanta, Georgia	28.90	734.0	30.02	762.5	63	17.2	94	SE	12.	5.4		0	1s		Calm	0	0	Clear	
Atlantic City, New Jersey	30.11	764.8	30.13	765.3	66	18.9	90	S	14	6.3		8c	0	W		0	0	Fair	
Augusta, Georgia	29.94	760.5	30.13	765.3	63	17.2	89	Calm	0	0		5ck	Sm'e	SE		0	0	Smoky	
Baltimore, Maryland	30.03	762.7	30.07	763.8	64	17.8	89	SW	5	2.2		2ck	Haze	SW	Calm	0	0	Fair	
Barnegat, New Jersey	30.12	765 0	30.14	765.5	67	19.4	89	SW	16	7.2		8c	0	SW		0	0	Fair	
Bismarck, Dakota	28.26	717 8	30.11	764.8	30	—1.1	78	NW	16	7.2		0	1ks		W	0.01	0.3	Clear	
Boerne, Texas	28.79	731.3			56	13.3	29	N	8	3.6		0	0			0	0	Clear	
Boise City, Idaho	27.52	699.0	30.48	774.2	43	6.1	75	NE	1	0.4		5k	2s	W		0	0	Fair	
Boston, Massachusetts	29.93	760.2	30.08	764.0	66	18.9	79	SW	7	3.1		8c;cs	Haze	W; Calm	Calm	Inap.	Inap.	Fair	
Brackettville, Texas	29.18	741.2	30.12	765.0	54	12.2	43	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.75	730.2	29.76	755.9	32	0.0	89	NW	32	14.3			10n		Calm	0.02	0.5	Light snow.	
Brownsville, Texas	29.97	761.2	30.03	762.7	70	21.1	95	NE	16	7.2			10s		NE	Inap.	Inap.	Cloudy	
Buffalo, New York	29.06	738.1	29.73	755.1	66	18.9	64	S	16	7.2		2k	8s	SW	SW	0	0	Fair	
Burkes, Arizona					54	12.2	32	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.69	754 1	29.94	760.5	63	17.2	72	S	12	5.4		5c	Haze	Calm	Calm	Inap.	Inap.	Fair	
Cairo, Illinois	29.59	751.6	29.98	761.5	54	12.2	67	NW	7	3.1		0	5s		NW	1.35	34.3	Clearing	
Camp Apache, Arizona	24.73	628.1	29.73	755.1	34	1.1	61	Calm			0	0	0			0	0	Clear	
Camp Grant, Arizona	25.34	643.6	30.14	765.5	53	11.7	19	N			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.95	684.5	30.44	773.2	36	2.2	45	N			2	0	0			0	0	Clear	
Camp, California	27.49	698.2	30.06	763.5	42	5.6	67	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.19	766 8	30.20	767.1	70	21.1	85	S	1	0.4			10s		S	0	0	Cloudy	
Cape Henry, Virginia	30.14	765.5	30.16	766.1	66	18.9	84	SE	8	3.6		2c	0	SE		0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	72	22.2	80	SE	18	8.0			10ks		SE	0	0	Cloudy	
Cape May, New Jersey	30.12	765.0	30.14	765.5	66	18.9	84	S	20	8.9		5c	0	W		0	0	Fair	
Castroville, Texas	29.43	747.5	30.13	765.3	63	17.2	33	NE	4	1.8		0	0			0	0	Clear	
Charleston, South Carolina	30.11	764.8	30.18	766.6	72	22.2	90	Calm	0	0			10s		SE	0	0	Cloudy	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	28	— 2.2	77	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.08	738.6	29.77	756.1	44	6.7	84	SW	8	3.6		2k	0	SW		1.41	35.8	Clear	
Cincinnati Ohio	29.22	742.2	29.86	758.4	58	14.4	88	NW	8	3.6			10n		NW	0.29	7.4	Light rain	
Cleveland, Ohio	29.04	737.6	29.73	755.1	47	19.4	64	SW	14	6.3			10s		SW	0	0	Threatening	
Coleman City, Texas	28.45	722.6	30.18	766.6	44	6.7	60	NW	5	2.2		0	0			0	0	Clear	
Columbus, Ohio	29.93	734.8	29.74	755.4	62	16.7	88	S	5	2.2			10n		S	0.01	0.3	Light rain	
Concho, Texas	28.30	718.8	30.04	763.0	40	4.4	63	NW	8	3.6		0	0			0	0	Clear	
Corsicana, Texas	29.75	755.6	30.24	768.1	48	8.9	78	N	3	1.3		0	0			0.05	1.3	Clear	
Davenport, Iowa	29.24	742.7	29.88	758.9	43	6.1	75	W	7	3.1		1k	0	W		0.98	24.9	Clear	
Decatur, Texas	28.96	735.6	30.16	766.1	48	8.9	49	N	3	1.3		0	0			0	0	Clear	
Denison, Texas	29.42	747.3	30.25	768.3	46	7.8	77	NW	6	2.7		0	0			0.30	7.6	Clear	
Denver, Colorado	25.01	635.2	30.23	767.8	30	— 1.1	47	SE	12	5.4		0	0			0	0	Clear	
Des Moines, Iowa	29.03	737.3	29.92	760.0	41	5.0	57	NW	7	3.1		0	5s		NW	0	0	Fair	
Detroit, Michigan	29.06	738.1	29.72	754.9	51	10.6	93	W	8	3.6			10n		W	0.13	3.3	Light rain	
Dodge City, Kansas	27.66	702.6	30 03	762.7	39	3.9	56	NW	17	7.6		0	0			0	0	Clear	
Dubuque, Iowa	29.09	738.9	29.79	756.7	41	5.0	65	W	7	3.1		5k	5ks	W	Calm	0.14	3.6	Cloudy	
Duluth, Minnesota	28.73	729.7	29.39	746.5	36	2.2	90	SW	8	3.6			10n		SW	0.14	3.6	Light snow	
Eagle Pass, Texas	29.46	748 3	30.21	767.3	56	13.9	46	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.99	761.7	30.06	763.5	52	11.1	100	S	6	2.7			Fog		Calm	0.02	0.5	Foggy	
Edinburg, Texas					64	17.8	94	N			6		10n		N	0.12	3.0	Cloudy	
El Paso, Texas					63	17.2	33	NW	6	2.7		0	0			0	0	Clear	
Erie, Pennsylvania	29.03	737.3	29.71	754.6	68	20.0	60	S	16	7.2			10s		SW	0	0	Cloudy	
Escanaba, Michigan	28.92	734.6	29.56	750.8	40	4.4	65	SW	10	4.5			10s		SW	0.14	3.6	Cloudy	
Florence, Arizona	28.56	725.4	30.16	766.1	49	9.4	37	Calm			0	0	0			0	0	Clear	
Fort Craig, New Mexico	25.78	654.8	29.84	757.9	36	2.2	36	N	1	0.4		0	0			0	0	Clear	
Fort Davis, Texas	25.39	644.9	30.35	770.9	57	13.9	26	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.65	753.1	30.21	767.3	41	5.0	74	Calm	0	0		2c	Fog	NW	Calm	0.15	3.8	Fair	
Fort Griffin, Texas	28.99	736.3	30.32	770.1	41	5.0	65	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	28.04	712.2	29.98	761.5	55	12.8	45	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.04	737.6	30.19	766.8	44	6.7	60	NW	4	1.8		0	0			0	0	Clear	
Fredericksburg, Texas	28.48	723.4	30.03	762.7	62	16.7	61	S	8	3.6		0	0			0	0	Clear	
Galveston, Texas	30.08	764.0	30.12	765.0	67	19.4	64	N	24	10.7		8cs	0	W		0.02	0.5	Cloudy	
Graham, Texas	29.15	740.4	30.23	767.8	49	9.4	57	Calm	0	0		0	0			0	0	Clear	
Grand Haven, Michigan	29.08	738.6	29.71	754.6	50	10.0	58	N	25	11.2			10s		W	1.32	33.5	Cloudy	
Indianapolis, Indiana	29.09	738.9	29.86	758.4	51	10.6	65	W	3	1.3			10s		W	1.15	29.2	Cloudy	
Indianola, Texas	30.14	765.5	30.16	766.1	65	18.3	73	NE	31	13.9		1c	2s	W	Calm	0.92	23.4	Fair	
Jacksboro, Texas	29.08	738.6	30.25	768.3	45	7 2	76	Calm	0	0		0	0			0	0	Clear	
Jacksonville, Florida	30.09	764.3	30.11	764.8	69	20 6	80	SE	4	1.8		10k	0	SE		0	0	Cloudy	
Keokuk, Iowa	29.28	743.7	29.90	759.4	44	6.7	68	NW	7	3.1		0	0			0.32	8.1	Clear	
Key West, Florida	29.97	761.2	30.01	762.2	77	25.0	73	E	12	5.4		2k	0	E		0.01	0.3	Clear	
Kittyhawk, North Carolina	30.16	766.1	30.19	766.8	67	19.4	89	SW	6	2.7		2ck	5s	SW	SW	0	0	Fair	
Knoxville, Tennessee	28.99	736.3	29.96	761.0	67	19.4	64	Calm	0	0		4cs	0	SW		0	0	Fair	
La Crosse, Wisconsin	28.93	734.8	29.66	753.4	41	5.0	65	W	21	9.4		2k	0	W		0	0	Clear	
La Mesilla, New Mexico	26.29	667.8	30.44	773.2	36	2.2	53	NE	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.74	755.4	30.07	763.8	68	20.0	34	NE	11	4.9		5k	0	Calm		0	0	Fair	
Lead City, Dakota	24.94	633.5	30.21	767.3	29	— 1.7	78	NW	8	3.6		0	0			0.04	0.8	Clear	
Leavenworth, Kansas	29.21	741.9	30.07	763.8	43	6.1	59	NW	8	3.6		0	0			0	0	Clear	
Los Angeles, California	29.65	753.1	29.99	761.7	54	12.2	74	NE	6	2.7		0	0			0	0	Clear	
Louisville, Kentucky	29.33	745.0	29.88	758.9	56	13.3	87	NW	13	5.8			10n		NW	0.96	24.4	Light rain	
Lynchburg, Virginia	29.42	747.3	30.08	764.0	66	18.9	84	S	4	1.8			10ks		Calm	0	0	Cloudy	
Madison, Wisconsin	28.74	730.0	29.72	754.9	41	5.0	74	SW	10	4.5		5k	0	SW		0.07	1.8	Fair	
Marquette, Michigan	28.79	731.3	29.45	748 0	61	16.1	66	SW	8	3.6			10ks		SW	0.07	1.8	Cloudy	
Mason, Texas	28.56	725.4	30.37	771.4	51	10.6	59	Calm	0	0		Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee																			
Milwaukee, Wisconsin	28.97	735.8	29.69	754.1	43	6 1	75	SW	20	8.9		0	1s		Calm	1.25	31.7	Clear	
Mobile, Alabama	29.98	761.5	30.02	762.5	77	25.0	73	SW	11	4.9			10s		SW	0.17	4.3	Cloudy	
Montgomery, Alabama	29.81	757.2	30.01	763.0	65	18.3	83	SE	1	0.4		8ck	2s	Calm	Calm	0	0	Cloudy	
Morgantown, West Virginia	28.86	733.0	29.88	758.9	63	17.2	72	S	7	3.1		5c	0	S		0	0	Fair	
Mt. Washington, N. H.	23.89	606.8	30.25	768.3	49	9.4	93	W	42	18.8		0	2s		W	0	0	Clear	
Nashville, Tennessee	29.43	747.5	29.96	761.0	60	15.6	88	NW	5	2.2			10n		NW	0.81	20.6	Light rain	
New Haven, Connecticut	29.99	761.7	30.11	764.8	66	18.9	89	S	4	1.8		5cs	Haze	W	Calm	0	0	Fair	
New London, Connecticut	30.19	766.5	30.15	765.8	68	20.0	84	SW	12	5.4		5cs	2s	S	SW	0	0	Fair	
New Orleans, Louisiana	29.96	761 0	30.02	762.5	72	22.2	90	SE	6	2.7			10s		S	0 66	16.8	Cloudy	
Newport, Rhode Island	30.09	764.3	30.14	765 5	63	17.2	89	SW	12	5.4		5c	0	W		0	0	Fair	
New York, New York	29.94	760.5	30.11	764.8	64	17.8	88	S	16	7.2		5cs	0	S		0	0	Fair	
Norfolk, Virginia	30.12	765.0	30.18	766 6	64	17.8	94	S	4	1.8		2c	Haze	Calm		0	0	Clear	
North Platte, Nebraska	27.27	692.6	29.96	761.0	30	— 1.1	78	NW	16	7.2		0	0			0	0	Clear	
Olympia, Washington Ter.	30.13	765.3	30.17	766.3	51	10.6	86	S	8	3.6			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	28.90	734.0	30.00	762.0	38	3.3	63	W	8	3.6		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.54	750.3	29.85	758.2	65	18.3	68	S	10	4.5		8c	0	W		0	0	Fair	
Pembina, Dakota	28.95	735.3	29.80	756.9	29	— 1.7	100	NW	32	14.3			10n		NW	0.54	13.7	Light snow	
Philadelphia, Pa	30.05	763.3	30.10	764.5	66	18.9	84	S	12	5.4		5c	Haze	Calm	Calm	0	0	Fair	
Phœnix, Arizona	28.92	734.6			57	13.9	31	NE			1	0	0			0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	12	—11.1	23	SE	40	17.9		0	0			0	0	Clear	
Ploche, Nevada	24.33	618.0	30.10	764.5	36	2.2	53	NW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.07	738.4	29.84	757.9	67	19.4	60	S	8	3.6		2c	0	W		0	0	Fair	
Port Huron, Michigan	29.06	738.1	29.70	754.4	51	10.6	86	SW	12	5.4			10n		Calm	0.02	0.5	Light rain	
Portland, Maine	30.01	762.2	30.06	763.5	56	13.3	94	SW	4	1.8			Fog			0	0	Foggy	
Portland, Oregon	30.18	766.6	30.28	769.1	51	10.6	93	W	3	1.3			10ks		W	Inap.	Inap.	Cloudy	
Prescott, Arizona	24.96	634.0	30.32	770.1	29	— 1.7	56	Calm	0	0		0	0			0	0	Clear	
Pilot Point, Texas	29.49	749.0	30.34	770.6	47	8.3	62	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	30.06	763.5	30.08	764.0	71	21.7	80	NE	6	2.7		0	0			0	0	Clear	
Red Bluff, California	29.79	756.7	30.16	766.1	49	9.4	78	NW	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.95	760.7	30.15	765.8	60	15.6	94	N			4		10s		N	1.04	26.4	Cloudy	
Rochester, New York	29.18	741.2	29.76	755.9	69	20.6	61	SW	11	4.9		8ck	0	W		0	0	Fair	
Roseburg, Oregon	29.66	753.4	30.25	768.3	39.5	4.2	96	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Sacramento, California	30.05	763.3	30.14	765.5	49	9.4	93	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	30.00	762.0	48	8.9	63	W	12	5.4		0	0			0.81	20.6	Clear	
St. Marks, Florida	30.08	764.0	30.10	764.5	67	19.4	89	SE	6	2.7		0	0			0	0	Clear	
St. Paul, Minnesota	28.72	729.5	29.54	750.3	37	2.8	71	W	16	7.2			10n		NW	Inap.	Inap.	Light snow	
Salt Lake City, Utah	26.02	660.9	30.35	770.9	37.0	2.8	53	SE	2	0.9		6cs	0	Calm		0	0	Fair	
San Antonio, Texas	29.49	749.0	30.08	764.0	64	17.8	49	N	5	2.2		0	0			0	0	Clear	
San Diego, California	29.95	760.7	30.02	762.5	54	12.2	49	NE	2	0.9		0	0			0	0	Clear	
Sandusky, Ohio	29.14	740.1	29.81	757.2	49	9.4	100	NW	32	14.3			10n		NW	0.20	5.1	Light rain	
Sandy Hook, New Jersey	30.07	763.8	30.10	764.5	66	18.9	84	SW	18	8.0		5c	0	W		0	0	Fair	
San Francisco, California	30.05	763.3	30.12	765.0	56	13.3	75	W	7	3.1		0	0			0	0	Clear	
Santa Fé, New Mexico	23.49	596.1	29.97	761.2	29	— 1.7	56	N	4	1.8		0	0			0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	67	19.4	89	Calm	0	0		2cs	Fog	Calm	Calm	0	0	Fair	
Shreveport, Louisiana	29.95	760.7	30.17	766.3	56	13.3	81	N	3	1.3		0	0			0.82	20.8	Clear	
Silver City, New Mexico	24.46	621.3			57	2.8	62	W	2	0.9		0	0			0	0	Clear	
Smithville, North Carolina	30.10	766.1	30.19	766.8	69	20.6	90	SE	4	1.8		0	5s		SW	0	0	Fair	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	63	17.2	89	S	5	2.2			10s		S	0	0	Cloudy	
Stockton, Texas	27.21	691.1	30.21	767.3	38	3.3	46	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	30.03	762.7	30.08	764.0	58	14.4	94	S	12	5.4		1c	0	SW		0	0	Clear	
Toledo, Ohio	29.10	739.1	29.76	755.9	52	11.1	79	S	8	3.6			10n		S	0.28	5.8	Light rain	
Tucson, Arizona					55	12.8	57	N	6	2.7		0	0			0	0	Clear	
Tybee Island, Georgia	30.11	764.8	30.14	765.5	69	20.6	95	Calm	0	0		0	8ks		SE	0	0	Cloudy	
Umatilla, Oregon	29.90	759.4			49.5	9.7	78	SE	4	1.8			10ks		SE	0	0	Cloudy	
Unalashka, Aleutian Islands					31	— 0.6	100	SW			1		10s		SW	0	0	Cloudy	
Uvalde, Texas	29.31	744.5	30.14	765.5	55	12.8	56	Calm	0	0		0	0			0	0	Clear	
Vicksburg, Mississippi	29.85	758.2	30.11	764.8	62	16.7	88	N	9	4.0			10s		N	0.27	6.9	Cloudy	
Virginia City, Montana	24.53	623.0	30.01	762.2	33	0.6	70	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.78	756.4	30.17	766.3	47	8.3	92	NW	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.98	761.5	30.09	764.3	66	18.9	89	S	12	5.4		2ck	2s	S	S	0	0	Fair	
Wickenburg, Arizona					42	5.6	68	NE			1	0	0[sm			0	0	Clear	
Wilmington, N. Carolina	30.08	764.0	30.16	766.1	66	18.9	89	Calm	0	0		0	2s,fog;		Calm	0	0	Fair	
Winnemucca, Nevada	29.96	659.4	30.32	770.1	32	0.0	79	NE	13	5.8		0	0			0	0	Clear	
Wood's Holl, Mass	30.10	764.5	30.15	765.8	63	17.2	94	S	14	6.3		2cs	0			0	0	Clear	
Yankton, Dakota	28.73	729.7	30.04	763.0	38	3.3	54	NW	20	8.9			10s		NW	0	0	Cloudy	
Yuma, Arizona	29.87	758.7	30.04	763.0	66	18.9	48	W	12	5.4		0	0			0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska																			
York Factory, B. A	30.01	762.2	30.06	763.5	26.0	— 3.3	94	NW	15	6.7		0	0			0	0	Clear	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.95	760.7	29.97	761.2	77	25.0	72	E	6.0	2.7		0	0			0	0	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I																			Robert Mason.
St. Thomas, W. I					81	27.2	82	NE	4	1.8		2c	5a	E		0.33	8.4	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	78	25.6	90	Calm	0	0		5ck	2s	Calm	SE	0.19	4.8		James Gall.
Navassa, W. I	29.81	757.2	29.99	761.7	81	27.2		E	8.3	3.7						0.99	25.1	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.99	761.7	29.99	761.7	85	29.4	72	E			2	0	4k			0	0	Fair	C. J. Hering
Medellin, Colombia, S. A	25.21	640.3			67.0	19.4	82	Calm	0	0		2cs	1ks			0.42	10.7		Thomas Herran.
Portland, Jamaica, W. I	29.71	754.6	30.02	762.5	73	22.8	90	E								Blank	Blank	Fine	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.86 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.18	766.6	77.5	25.3	77.5	25.3	75	S	7	3.1	.....	.....	0	.....	.....	0.02	0.5	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.02‡	762.5‡	.....	.....	59	15.0	54	SSW	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan.....	30.33*	770.4*	63	17.2	56.5	13.6	87	Calm	.....	.....	0	.....	5c;ck	.....	SW	0	0	.....	.....	Fair.....	
Adams. Valparaiso, Chili.....	30.19	766.8	65	18.3	60	15.6	76	N	.....	.....	1	.....	2	.....	N	.....	.....	Smooth	.....	Fair.....	
Alaska. S. 13° 04′ W. 77° 01′.....	30.16	766.1	66	18.9	63	17.2	89	ESE	.....	.....	2	.....	10	.....	SE	0	0	Long	SE	D. clouds....	
Alliance, Smyrna, Turkey.....	30.01‡	762.2‡	.....	.....	71	21.7	62	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ashuelot. Nagasaki, Japan.....	30.24	768.1	72	22.2	70	21.1	85	NE	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.03	762.7	52	11.1	72	22.2	90	W	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Rainy.....	
Colorado New York, N. Y.....	30.12‡	765.0‡	.....	.....	65	18.3	84	SSW	10	4.5	.....	.....	2	.....	NW	.....	.....	.....	.....	Hazy	
Constitution, Havre, France.....	.....	.....	.....	.....	57	13.9	94	ENE	.....	.....	1	.....	3	.....	Calm	.....	.....	.....	.....	Fair.....	
Despatch, Constantinople, Turkey	30.07‡	763.8‡	.....	.....	80	26.7	58	NE	.....	.....	1	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Essex, About S. 36°, E. 11°.....	30.13	765.3	59	15.0	54	12.2	??	SW	.....	.....	3	.....	8	.....	SW	.....	.....	Light	SSE	Cloudy.....	
Franklin, Norfolk, Va.....	30.26	768.6	70	21.1	67	19.4	??	S	6	2.7	.....	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Gettysburg Port Said, Egypt.....	29.97‡	761.2‡	.....	.....	85	29.4	100	NNE	.....	.....	3	.....	2	.....	.....	0	0	Smooth	NW	D. clouds....	
Guard. N. 4° 47′, W. 39° 47′.....	30.00	762.0	84	28.9	83	28.3	79	E	.....	.....	4	.....	2	.....	E	.....	.....	Smooth	.....	Clear.....	
Hartford, Santos, Brazil.....	30.13	765.3	75	23.9	74	23.3	86	S	3.6	1.6	.....	.....	10	.....	.....	0	0	Smooth	.....	Cloudy.....	
Marion, Trieste, Austria.....	30.10	764.5	64	17.8	62	16.7	77	NW	.....	.....	1	.....	5	.....	NNW	0	0	.....	.....	Fair.....	
Michigan. Buffalo, N. Y.....	29.84†	757.9†	.....	.....	66	18.9	68	S	.....	.....	6	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan	30.41‡	772.4‡	.....	.....	59	15.0	70	NNW	.....	.....	0–1	.....	8	.....	NNW	.....	.....	.....	.....	Fair.....	
New Hampshire, Port Royal, S. C.....	30.36	771.1	91	32.8	85	29.4	76	SSE	2	0.9	.....	.....	8	.....	Calm	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	62	16.7	88	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.18	766.6	64	17.8	51	10.6	72	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Light mist..	
Passaic, Washington, D. C.....	.....	.....	.....	.....	66	18.9	100	S	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Plymouth, N. 22° 21′, W. 62° 50′.....	30.10	764.5	82	27.8	81	27.2	70	NE	.....	.....	2–3	.....	10	.....	N;E	.....	.....	Mod'ate	N;E	Cloudy.....	
Powhatan, Boston, Mass.....	30.08‡	764.0‡	.....	.....	63	17.2	89	SW	5.4	2.4	.....	.....	5	.....	.....	0	0	.....	.....	Clear.....	
Quinnebaug, League Island, Pa.....	30.08‡	764.0‡	.....	.....	66	18.9	89	SSE	.....	.....	3	.....	5	.....	S	.....	.....	.....	.....	Fair	
Ranger. Hong-Kong, China	30.13	765.3	81	27.2	80	26.7	82	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo. Brownsville, Texas.....	29.99	761.7	74	23.3	72	22.2	95	N	.....	.....	6	.....	10	.....	N	.....	.....	.....	.....	Light rain...	
Santee, Annapolis, Md	30.04‡	763.0‡	.....	.....	68	20.0	84	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Philadelphia, Pa.....	30.00	762.0	.....	.....	64	17.8	89	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	.....	Fair	
St. Louis, League Island, Pa.....	30.02	762.5	67	19.4	67	19.4	79	SSW	7	3.1	.....	.....	5	.....	SW	0	0	.....	.....	Fair	
Supply, Havre, France.....	30.00	762.0	60	15.6	60	15.6	65	E	.....	.....	1	.....	2	.....	ESE	.....	.....	.....	.....	Misty.....	
Swatara, Boston, Mass.....	30.08‡	764.0‡	.....	.....	63	17.2	89	SSW	.....	.....	2	.....	5	.....	.....	0	0	.....	.....	Hazy.....	
Trenton, Villafranca, France.....	30.06‡	763.5‡	.....	.....	74	23.3	90	ESE	.....	.....	1–2	.....	5	.....	S;E	0	0	.....	.....	Fair	
Vandalia, N. 36° 49′, W. 0° 44′.....	29.88‡	758.9‡	.....	.....	69	20.6	60	Calm	.....	.....	0	.....	5	.....	S	.....	.....	Smooth	.....	Fair.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	63	17.2	83	SW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.

*It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.			CHARACTER.	DIRECTION FROM—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 34° 25', E. 157° 45'		30.38*	771.6*	66	18.9	94	NNE			6		5		NNE	Heavy	Rough	NNE	Squally	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 16° 50', W. 99° 50'		29.90*	759.4*	79	26.1	91	Calm			0		9		Calm	Blank			Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		30.10*	764.5*	55	12.8	74	Calm			0		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic N. 45° 11', W. 41° 40'		29.94*	760.5*	61	16.1	??	W			5				W	Blank	Mod'ate	N	Raining	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic, N. 48° 50', W. 57° 56'		30.36*	763.5*	56	13.3	??	WNW			4				W	0	Mod'ate	W	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig																			Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—Continued.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, *President*; Peter Wright & Sons, *General Agents*.																			
S. S. Indiana, Philadelphia, Pa		30.09*	764.3*	73	22.8	95	SE			1		0			0			Fine	Captain Sargent.
S. S. Ohio, Liverpool		29.95	760.7	67	13.9	87	SE			1		10		Calm	0			Hazy	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 44′ W. 8° 11′		29.56*	750.8*				SE	8	3.6			6		W		Long	WNW	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 10° 45′, W. 67° 45′		29.85	758.2	82	27.8	75	W	4	1.8		2c	5k		W	0	Smooth		Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 18, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.96	760 9	75.0	23.9	56	ESE	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair..	Kesxuche.
Algiers	.....	.....	29.90	759.5	74.5	23.6	50	W	.....	.....	1	.....	2	.....	.....	0.461	11.7	Fair	Tourilliere.
La Calle	.....	.....	29.95	760.7	72.9	22.7	82	NW	.....	.....	5	.....	8	.....	.....	0	0	Very cloudy	Foufrede.
Tunis	.....	.....	29.93	760.1	80.1	26.7	50	E	.....	.....	5	.....	9	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	30.05	763.2	80.6	27.0	.....	WSW	.....	.....	5	.....	9	.....	.....	0	0	Covered	Gau.
Saida	.....	.....	29.98	761.6	67.6	19.8	57	S	.....	.....	5	.....	4	.....	.....	0.138	3.5	Cloudy	Horbin.
Tebessa	.....	.....	29.98	761.4	74.5	23.6	33	SSW	.....	.....	7	.....	8	.....	.....	Inap.	Inap.	Very cloudy	Watrin.
Geriville	.....	.....	29.95	760.6	65.8	18.8	73	S	.....	.....	3	.....	0	.....	.....	0.197	5.0	Clear	Brugnlaux.
Laghouat	.....	.....	30.02	762.5	67.1	19.5	60	Calm	.....	.....	0	.....	3	.....	.....	0	0	Pretty fair..	Bertrand.
Biskra	.....	.....	29.97	761.1	81.9	27.7	46	WNW	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair..	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.41	746.9	29.95	760.7	57.6	14.2	86	NE	.....	.....	1	.....	10	.....	.....	0.276	7.0	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.16	740.6	29.92	759.9	57.6	14.2	92	ENE	.....	.....	1	.....	10	.....	.....	0.283	7.2	.....	Dr. Wierzbiski
Eperies	29.13	739.8	30.00	762.2	56.5	13.6	92	Calm	.....	.....	0	.....	10n	.....	.....	0.094	2.40	.....	Julius Mikolik.
Gratz	28.67	728.1	29.91	759.8	54.7	12.6	98	SSE	.....	.....	2	.....	10	.....	.....	0.063	1.60	.....	Andreas Rospini.
Hermannstadt	28.55	725.2	30.01	762.2	62 4	16.9	68	SSE	.....	.....	3	.....	4	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.55	725.1	29.88	758.9	54.7	12.6	91	NW	.....	.....	1	.....	10	.....	.....	0.890	22.6	.....	Prof. C. Wagner.
Lemberg	29.04	737.5	30.02	762.5	55.6	13.1	90	SE	.....	.....	2	.....	7	.....	.....	0.071	1.8	.....	Dr. T. Stanecki.
Pola	29.80	759.1	30.00	761.9	65.7	18.7	80	SE	.....	.....	2	.....	10s	.....	.....	0	0	.....	I.R.Hydrographic Office.
Szathmar	29.60	751.9	30.06	763.5	62.2	16.8	70	SE	.....	.....	3	.....	10	.....	.....	0.228	5.8	.....	Julius Csics, S. J.
Szegedin	29.71	754.6	29.98	761.6	61.9	16.6	83	S	.....	.....	1	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.92	760.0	30.02	762.6	57.7	14.3	99	Calm	.....	.....	0	.....	10	.....	.....	1.130	28.7	Rainy	P. Busin.
Vienna	29.21	741.9	29.92	760.0	53.2	11.8	97	W	.....	.....	1	.....	6	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.35	720.0	29.84	758.0	54.1	12.3	67	E	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. M. Passau.
Brussels	29.63	752.6	29.83	757.7	55.0	12.8	69	E	.....	.....	4	2	.....	N	.....	0	0	.....	Royal Observatory
Furnes	29.83	757.6	29.85	758.2	56.3	13.5	72	ESE	.....	.....	2	.....	3	.....	.....	0	0	Light fog	M. E. de Cae
Maeseyck	29.79	756.7	29.92	760.0	54.7	12.6	76	ESE	.....	.....	4	.....	5	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

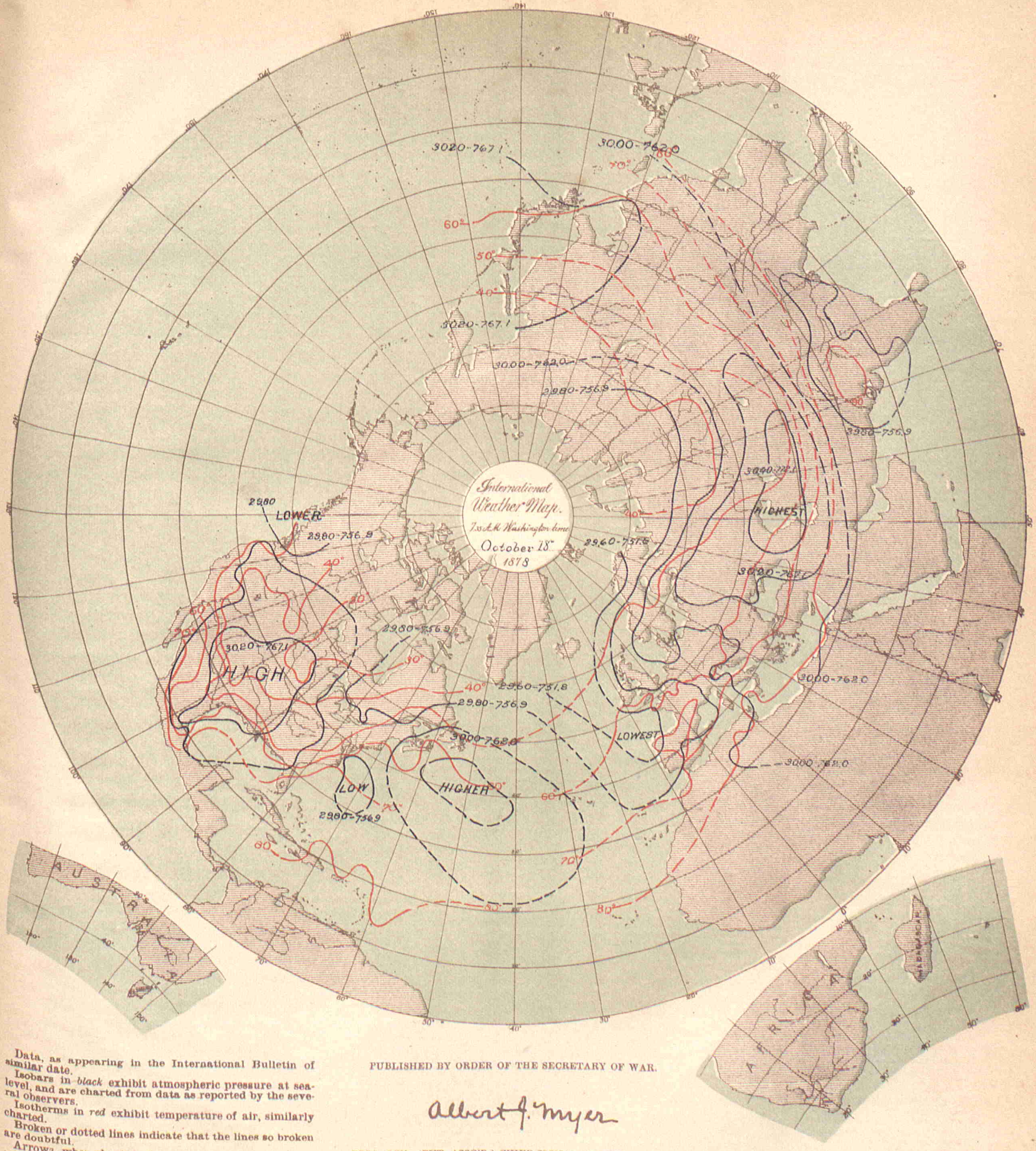
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.66	758.4	29.96	761.0	53.9	12.2		SE	15	6.7			6			0	0	D. clouds	W. Boswell.
Ardrossan	29.85	758.2	29.87	758.7	58	14.4		ESE			1		4					Hazy	George Carrick.
Armagh, Observatory			29.82	757.4	56.5	13.6		ENE	6	2.7			4					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.85	758.2	54.3	12.4		ESE	19	8.5			9					Misty	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.51	749.5	29.90	759.4	53 7	12.1		E			3		6			0	0	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.84	757.9	29.87	758.7	80.6	26.7		SE			4		9					Raining	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.85	758.2	56.0	13.3		ESE			1		7					D. clouds	H. Todd. [H.C.
Cardington			29.88	758.9	54.0	12.2		E			1		10					Overcast	John McLaren.
Chatham, School M. E.	29.68	753 9	29.81	757.2	52.2	11.2		S			1		5					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.28	718.3	29.73	755.1	54.0	12.2		E			3		9					Foggy	Alexander Watt.
Donaghadee	29.82	757.4	29.85	758.2	57	13.9		S			2		8					D. clouds	J. Mac Gowan.
Dover	29.77	756.1	29.79	756.7	54	12.2		ESE			5		7					Gloomy	J. Costello.
Falmouth, Observatory	29.45	748.0	29.68	753.9	57.0	13.9		SE			5		10					Squally	The Staff.
Fort Napier, (Natal)	27.61	701.3	29.93	760.2	71.0	21.7		E			3		8					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.69	754.1	29.92	760.0	86	30.0		Calm			0		4					D. clouds	
Galway, Queen's College			29.68	753.9	55	12.8		ESE			1		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.81	757.2	29.86	758.4				E			2		4					D. clouds	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.68	753.9	29.89	759.2	54.2	12.3		ENE			1		9					Misty	D. G. Maclean.
Great Yarmouth	29.90	759.4	29.90	759.4	54	12.2		E			5		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.65	753.1	29.83	757.7	53.5	11.9		E			2		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.50	749.3	29.64	752.8	58.5	14.7		NE			3		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.70	754.4	61	16.1		E			6		k			0	0	Fair	M. P. Moyle.
Holyhead	29.73	755.1	29.78	756.4	54	12.2		E			3		2					Blue sky	John Tilston.
Jersey	29.36	745.7	29.65	753.1	57.3	14.1		E			4		10					Hazy	J. Fisher.
Kew, Observatory	29.78	756.4	29.82	757.4	53.6	12.0		E	26	11.6			10					Misty	The Staff.
Kingstown	29.77	756.1	29.79	756.7	57	13.9		SE			3		3					Blue sky	George Mitchell.
Leicester, Museum			29.86	758.4	54.1	12.3		E			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.98	761.5	30.05	763.3	78	25.6		SE			2		8k					Overcast	Sergt. Beckett.
Nairn																			W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	75.5	24.2		SE			1		10					Drizzling	C. S. Duncombe.
Nottingham, Observatory	29.70	754.4	29.89	759.2	56.6	13.7		E			3		10k		E	0.012	0.30	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.32	744.7	29.84	757.9	52.8	11.6		ENE			3		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.80	756.9	54	12.2		E			2		10					Overcast	H.E. Bellamy.
Plymouth	29.62	752.3	29.70	754.4	54.8	12.7		NE			5		10					Overcast	John Merrifield.
Roche's Point	29.67	753.6	29.71	754.6	57	13.9		ESE			5		10					Hazy	W. Kennedy.
Saint Ann's Head	29.56	750.8	29.72	754.9	54	12.2		ESE			6		5					Misty	John C. Walker.
Sandwick Manse, (Orkneys)			29.91	759.7	56.1	13.4		SSE	11	4.9			6					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.10	764.5	67.6	19.8		Calm			0		5					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.63	752.6	29.91	759.7	55.8	13.2		E			2		8			0	0	Overcast	W. F. Cooper.
Silloth, Rectory	29.86	758.4	29.89	759.2	62.8	17.1	73	SE			1		0			0	0	Blue sky	C. Edith Redford.
Stonyhurst, Observatory	29.49	749.0	29.89	759.2	53.1	11.7		E			1		10					Threatening	Rev. S. J. Perry.
Stratfield Turgiss	29.61	752.1	29.82	757.4	54.8	12.7		SE			2		8					D. clouds	Rev. C. H. Griffith, F.M.S
Thurso	29.83	757.7	29.89	759.2	62	16.7		SSE			2		1					Blue sky	John Trotter.
Truro, Royal Institution			29.70	754.4	59	15.0		E			7		10					Gloomy	W. Newcombe.
Valencia, Observatory	29.60	751.8	29.63	752.6	61.9	16.6		E	16	7.2			4					D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.96	761.0	60.0	10.0	77	N			3		7k			0.05	1.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.88	758.9	30.07	763.8	77.6	25.3	59	NE	12.0	5.4			1		NE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	47.0	8.3	80	E	3	1.3		0	0			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Wind. Direction. From—	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 42° 35′, W. 52° 40′			30.36	771.1	60	15.6	SSE		1		9			2		Overcast	Capt. Alex. Wilson.
Barque Commewyne, N. 17° 20′, W. 49° 25′			29.92	760.0	82	27.8	SSW		5		2			4		Blue sky	Capt. A. Buchan.
S. S. Gordon Castle																	Capt. W. Waring.
Barque Margaret Smith, N. 21° 40′, W. 70° 20′			29.92	760.0	82	27.8			2		3				NE	D. clouds	Capt. D. W. A. Quaile
Schooner Traveller																	Capt. Alex. Simpson.
Barque Virginia																	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	BAROMETER: Corrected for instrum'tal error and temperature.		BAROMETER: Reduced to sea-level.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND. Direction.	WIND. Velocity		WIND. Force.	CLOUDS. Amount.		CLOUDS. Direction.		RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.		WEATHER.	OBSERVER.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.		
Punta Arenas																			
San José	26.18	665.0	29.90	759.4	67.6	19.8	98	NE			1	10s				0.6	15.2		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.98	761.6	30.03	762.8	56.5	13.6	79	SE			2		10						
Fanöe	30.02	762.5	30.04	763.0	55.4	13.0	76	NE			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.73	755.1	29.76	756.0	50.5	10.3	92	SW			2		10						
Vestervig	28.92	759.9	30.09	764.2	52.5	11.4	96	NE			2		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.21	741.8	29.76	755.8	59.0	15	85	NE			1		5		SE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.67	753.6	29.78	756.4	55.8	13.2	93	NE			2		2		NW	0	0	Slightly cl'dy	Ronvallet, Director.
Avignon, Normal School	29.69	754.0	29.76	756.0	60.1	15.6	93	S			2		10		SE	0.571	14.5	Heavy rain.	M. Giraud, Director.
Bar-sur-Seine	29.17	740.8	29.71	754.5	66.4	19.1	67	S			1		5ck		SSW	0	0	Cloudy	C. Saillard.
Beauvais, Normal School	29.48	748.9	29.77	756.1	57.4	14.1	74	E			2		2			0	0	Slightly cl'dy	Frere Eugene Marie, Director.
Besançon, Normal School	28.81	733.6	29.76	755.8	62.2	16.8	74	E			2		10		SW	0	0	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	28.86	733.0	29.77	756.2	60.7	15.3	70	SW			1		5ck		S	0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.13	739.8	29.66	753.3	68.7	20.4	70	SE			2		8 km		SE	0	0	Very cloudy	A. Waquet, Director.
Brest, Naval Observatory	29.34	745.1	29.58	751.3	60.1	15.6	83	Calm			0		10		Calm	0	0	Foggy	M.de Rermaur, Director.
Carcassonne, Normal School	29.29	744.0	29.70	754.4	58.3	14.6	83	W			2		5	W	W	1.394	35.4	Cloudy	Septembre, Director.
Caen	29.60	751.8	29.67	753.5	59.7	15.4	75	SE			2		0			0	0	Clear	M. Lair, Director.
Chartres, Normal School	29.10	739.0	29.65	753.2	56.1	13.4	95	E			2		9		W	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.44	747.8	29.75	755.6	65.8	18.8	71	SSE			1		2ck			0	0	Slightly cl'dy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.33	719.5	29.63	752.7	67.1	19.5	54	SE			2		10		S	0	0	Covered	Alluard, Director.
Commercy, Normal School	28.96	735.5	29.82	757.5	58.6	14.8	74	E			3		ck		E	0	0		Dr. Coulet, Director.
Commune de Grèasque*	29.09	738.8	29.84	757.8	64.9	18.3	90	SE			0		10	SE		0	0	Covered	M. Kina.
Gronoble, Normal School	28.95	735.2	29.69	754.1	64.4	18	78	ENE			1		10c	S		0	0	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.38	746.2	29.59	751.6	63.3	17.4	88	ENE			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.34	745.2	29.64	752.9	63.1	17.3	72	SE			1		2	SW	S	0	0	Slightly cl'dy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.89	733.9	29.78	756.4	68.2	20.1	76	NE			1		8		E	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	29.61	749.6	29.61	752.1	61.5	16.4	75	E			1				E	0.236	6.0		Lt T. Carré, Director.
Mâcon, Normal School	29.78	756.5	29.82	757.3	61.2	16.2	84	Calm			0		2			0	0	Slightly cl'dy	M. Galzin, Director
Mirecourt, Normal School	28.75	730.3	29 78	756.3	59.4	15.2	80	N			1		5n		S			Raining	M. Barbier, Director.
Nismes, Normal School	29.52	749.7	29.72	754.8	64.0	17.8	78	SE			1		5		N	0.63	16.	Cloudy	Boyer, Director.
Orleans																			
Privas, Normal School	28.74	730.1	29.80	756.9	58.1	14.5	89	S			1		8	S	S	0.47	12.	Very cloudy	M. Cantier.
Puy de Dome (Summit)	24.87	631.8			48.2	9.0	95	SE			3		Fog			0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.59	751.5	29.62	752.3	62.6	17 0	94	W			1		Fog	W	W	0.35	9.	Foggy	Lt. Decante, Director.
Rouen, Normal School	29.62	752.4	29.71	754.6	62.6	17.0	61	ENE			2		0			0	0	Clear	Frere Lucard, Director.
Saint Malo (Port)			29.61	752.2	61.5	16.4	73	SE			2		5		SE	0	0	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.55	750.6	29.71	754.7	61.2	16.2	77	NE			1		6	SSE	ENE	0	0		E. Renou.
Tarbes, Normal School	28.63	727.2	29.70	754.3	59.0	15	89	SW			2		10			0.39	10.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.67	738.4	29.77	756.2	62.4	16.9	85	N			1		2		SE	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.82	757.5	29.85	758.2	82.4	28										0	0		L'Abbé Marchés.
Lyons, Observatory			30.00	762.1									7			0	0		
Marseilles, Observatory			29.76	755.8	68.7	17.6	88	SE			3		10			1.014	25.75	Thunder-storm	The Staff.
Mont-Louis	24.56	623.8	29.87	758.8	46.4	8.0	63	SW			3		10			0	0		M. Cave.
Nice			29.90	759.5	66.6	19.2	85	E			4		10					Raining	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.43	737.6	29.71	754.5	59.2	15.1	77	NE			3		6		SSE	0	0		Marié Davy, Director
Perpignan			29.69	754.2	64.4	18.0	69	N	9.3	4.17			10		SE	1.610	40.9		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.22	564.3			31.3	- 0.4		SW			4-6		10			0.718	18.1	Snowy	Gen'l de Nansouty
Toulouse, Observatory	28.98	736.1	29.70	754.3	55.2	12.9	99	WSW			3		10			1.236	31.40	Raining	B. Ballard.
Tours																			C. Marquet.
Versailles			29.71	754.6	58.6	14.8	68	E			1		10			0	0	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.18	766.6	30.21	767.2	59.0	15.0	98	E	4.0	1.8		4ck				0.228	5.8	Cloudy	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 303 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,360 m., or 7,702.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.03	737.4	29.87	758.7	55.8	13.2	77	E			3		8	W		0	0	Foggy	Prof. Dr. Hoh.
Berlin	29.78	756.3	29.95	760.7	57.0	13.9	85	E			1		10			0.071	1.8	Raining	Prof. Arndt.
Breslau	29.39	746.6	29.92	760.0	55.2	12.9	91	ESE			2		8			0.011	0.27	Dust-haze	Royal University Obs'y
Carlsruhe	29.42	747.3	29.84	758.0	55.0	12.8	80	NE			1		9			0.039	1.0		Albert Senz.
Cassel	29.32	744.8	29.92	760.0	57.2	14.0	70	NE			2		7	NE		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.73	755.2	29.89	759.3	58.6	14.8	68	E			2		4			0	0		Director Lose.
Emden	30.04	762.9	30.07	763.8	55.2	12.9	77	E			3		2			0	0		Prof. Prestel.
Frankfort on the Main	29.54	750.4	29.91	759.6	60.8	16		E			2		6			0	0		Physical Society.
Friedrichshafen	28.41	721.5	29.82	757.3	59.0	15.0	82	NE			6		7	WNW		0.252	6.4		M. Wilhelm.
Hamburg	29.94	760.4	30.01	762.2	55.6	13.1	86	NE			2		10			0.008	0.2	Light fog	Captain F. Hegemann.
Kiel	30.00	762.1	30.02	762.6	53.6	12.0	92	NE			1		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.98	761.4	30.06	763.5	59.9	15.5	79	E			3		6			0	0		Prof. E. Luther.
Köslin			29.94	760.5	58.6	14.8		SE			4		2			0	0		H. Müller.
Leipsic, Observatory	29.54	750.3	29.96	761.0	54.7	12.6	85	NE			1		10	NNE		0	0		Prof. Bruhns.
Memel, Naval School	30.09	764.2	30.13	765.4	57.2	14.0	70	SE			2		0						Reinbrecht and Skalweit.
Neufahrwasser	30.04	763.0	30.06	763.4	58.1	14.5	82	SE			2		9			0.016	0.4		A. Lothes.
Posen	29 67	753.6	29.96	761.0	57.7	14.3	82	SE			5		9			0.102	2.6		Dr. Magener.
Strassburg (in Alsace)	29.30	744.3	29.85	758.1	57.9	14.4	83	NNE			3		10	NE		0.005	0.12		Astronomical Observatory.
Stuttgart	28.93	734.8	29.87	758.6	53.6	12.0	83	NE			1		10			0.091	2.3		Prof. Schoder.
Treves, (Trier)	29.30	744.2	29.82	757.4	57.4	14.1	65	NE			1		2			0	0	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.30	721.1	29.86	758.5	54.5	12.5	74	NW	1.6	0.7			9k		E				Dr. Von Bebber.
Wustrow, Naval School	29.97	761.2	29.99	761.8	55.4	13.0	94	NE			3		10ks			0.008	0.2		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.74	755.4	30.12	765.0	78.4	25.8		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.37	746.0	29.84	757.9	90.6	32.6	41	Calm					1	WSW		0	0	D. clouds	
Bombay	29.78	756.4	29.82	757.4	84.5	29.2	85	S	12	5.4			10	W	SW	0	0	Overcast	
Poona	27.81	706.3	29.80	756.9	81.0	27.2	62	E					10		E	0.11	2.8	Raining	
Lahore	29.02	737.2	29.76	755.8	83.6	28.7	44	Calm	1.5	0.7						0	0	Blue sky	
Belgaum	27.28	693.0	29.82	757.4	76.1	24.6	86	W	2	0.9			6	E	E	0	0	D. clouds	
Roorkee	28.87	733.3	29.76	755.9	82.8	28.2	57	Calm	1	0.4						0	0		
Agra	29.22	742.2	29.78	756.3	91.2	32.9	31	N								0	0		
Nagpur	28.76	730.6	29.80	756.9	82.6	28.1	77	Calm	2.3	1.0			9		W	0	0	Gloomy	
Lucknow	29.42	747.2	29.79	756.6	87.7	30.9	51	Calm	1.4	0.6						0	0	Blue sky	
Allahabad	29.48	748.8	29.79	756.6	81.1	27.3	60	Calm	0.6	0.3			0			0	0	Blue sky	
Patna	29.60	751.9	29.78	756.5	85.0	29.4	64	Calm	0.2	0.1			2	E	E	0	0		
Hazaribagh	27.80	706.0	29.80	756.9	80.0	26.7	69	NW	3.2	1.4			2		W	0	0		
Cuttack	29.72	754.9	29.80	757.0	84.0	28.9	73	S	1.1	0.5						0	0	Blue sky	
Calcutta (Alipore)	29.77	756.1	29.79	756.7	83.0	28.3	85	NW	0.5	0.2			0			0	0	Blue sky	
Goalpara	29.88	746.2	29.77	756.0	82.9	28.3	69	Calm	1.5	0.7			0			0	0	Blue sky	
Chittagong	29.73	755.1	29.82	757.4	79.9	26.6	89	Calm	1.4	0.6			10			0	0	Misty	
Sibsagar	29.45	748.0	29.78	756.4	83.5	28.6	69	Calm	0.4	0.2			8			0	0	D. clouds	
Jubbulpore	28.47	723.0	29.82	757.4	84.6	29.2	56	NNE	0.8	0.4			5			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.64	752.8	30.05	763.2	57.0	13.9	90	Calm	0	0	.....	.....	10	.....	.....	0.031	0.8	.....	Prof. Giovanni Clodig.
Padua	29.91	759.6	30.02	762.4	58.8	14.9	90	ENE	4.3	1.9	.....	.....	10	E	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.83	757.6	30.02	762.5	58.1	14.5	84	NE	0	0	.....	.....	10	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.49	749.0	30.00	762.1	58.3	14.6	86	SSW	.....	.....	2	.....	10	.....	.....	0.167	4.0	.....	Prof. Schiaparelli.
Moncalleri	29.10	739.1	30.00	762.0	54.7	12.6	96	SE	2.5	1.1	.....	.....	10	E	.....	0.244	6.2	.....	Prof. P. F. Denza.
Mondovi	28.08	713.3	29.98	761.6	51.3	10.7	97	NE	.....	.....	2	.....	9	.....	.....	0.028	0.7	.....	Prof. D. C. Bruno.
Porto Maurizio	29.67	753.5	29.89	759.1	64.4	18.0	94	NNE	.....	.....	4	.....	10	SW	.....	0.087	2.2	.....	Prof. L. Vassallo.
Genoa	29.77	756.1	29.94	760.4	64.0	17.8	75	NE	6.3	2.8	.....	.....	10	S	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.71	754.6	30.02	762.6	59.2	15.1	84	ESE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.73	755.1	29.98	761.5	66.2	19.0	81	NNE	.....	.....	2	.....	10	SSW	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.83	757.7	29.91	759.8	64.9	18.3	88	ENE	6.3	2.8	.....	.....	10	S	.....	0.748	19.0	.....	Prof. P. Monte.
Pesaro	29.93	760.2	29.98	761.4	65.3	18.5	85	N	5.6	2.5	.....	.....	10	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.47	723.0	30.01	762.2	62.8	17.1	80	N	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.82	757.5	30.00	761.9	74.1	23.4	60	S	16 8	7.5	.....	.....	9	.....	.....	0	0	.....	Prof. P G. S. Ferrari.
Naples, O. U	29.91	759.7	30.11	764.7	75.2	24.0	58	SW	.....	.....	1	.....	8	WNW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.86	758.4	30.11	764.8	74.1	23.4	66	S	3.9	1.7	.....	.....	3	N	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.70	754.3	29.89	759.1	75.4	24.1	77	E	.....	.....	2	.....	10	SW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.21	741.9	30.08	763.9	73.6	23.1	69	SW	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.77	756.2	30.02	762.6	81.9	27.7	26	NW	11.2	5.0	.....	.....	9	.....	.....	0	0	.....	Prof. G. Caccialore.
Syracuse	30.05	763.3	30.13	765.2	73.2	22.9	75	SSW	4.9	2.2	.....	.....	10	SE	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.93	760.2	30.13	765.3	62.2	16.8	92	NNE	1.9	0.85	.....	.....	0	.....	.....	0	0	Clear	I. Arai, Director.
Tokei (Yeddo) Observatory	30.20	767.1	30.27	768.8	59.4	15.2	94	NNW	5.4	2.4	.....	.....	10s	.....	.....	0.120	3.05	Cloudy	Prof. P. V. Veeder.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	60.4	15.8	62	N	.....	.....	5	4os	0	.....	.....	0.134?	4.4?	½ cloudy	P. Ceballos.
Guadalajara	25.11	637.9	30.16	766.7	56.8	13.8	63	NE	.....	.....	3	4	.....	E	.....	0	0	Clear	Prof. L. Perez.
Guanajuato	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Ortiz.
Leon	24.50	622.3	30.09	764.4	56.8	13.8	74	NE	.....	.....	4	0	6sk	.....	NE	0	0	½ cloudy	Prof. M. Leal.
Mexico	23.16	588.2	30.25	768.3	50.0	10.0	89	NW	2.2	1.0	.....	0	10km	.....	NW	.....	.....	Light rain	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	56.7	13.7	61	N	.....	.....	2	1c	7k	.....	E	0.111	2.8	Misty	M. Y. de Leon, M. E
Puebla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. B. Gonzalez.
Tlacotalpam	29.95	760.8	29.96	761.1	74.5	23.6	84	N	.....	.....	7	1	8	NNE	N	0.406	10.3	Cloudy	M. M. Cházaro.
San Luis Potosi	24.09	611.0	30.01	762.3	54.0	12.3	58	SE	.....	.....	.....	.....	10	.....	SE	0.532	13.5	Covered	G. Barroeta, M. D.
Vera-Cruz	30.01	762 3	30.04	763.0	78.8	26.0	64	NNW	30.5	13.7	.....	0	8sk	.....	N	0.197	5.0	Threatening	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	53.6	12	80	NE	.....	.....	2	0	5	.....	NNE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.20	589.5	29.97	761.3	52.9	11.6	70	NNW	11.6	5.2	.....	4	2	Calm	NE	0	0	.....	Prof. P. Spina.
Durango	24.23	615.5	30.05	763.3	64.0	17.8	80	NE	.....	.....	1	0	9k	.....	.....	0	0	Very cloudy	M. Y. de Leon, C. E.
Colima	28.35	720.1	29.98	761.6	76.8	24.9	66	E	.....	.....	1	0	4	.....	E	0	0	½ cloudy	R. Banda, C. E.
San Juan E. Michapam	29.92?	757.2?	29.96	760.9	73.4	23	.....	Calm	.....	.....	0	0	10n	.....	.....	1.398	35.5	Rainy	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Guanajuato, 2,051.4 m., or 6,730.0 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; Puebla, 2,155 m., or 7,069.9 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.86	758.4	29.86	758.4	56.1	13.4	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.96	760.9	30.01	762.3	51.3	10.7	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.96	760.9	29.96	760.9	53.4	11.9	.....	ENE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.86	758.4	29.86	758.4	55.6	13.1	70	E	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.89	759.2	29.94	760.4	56.3	13.5	74	E	.....	.....	4	.....	5	.....	.....	0	0	Cloudy	H. v d Broek
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.03	762.8	30.09	764.2	55.0	12.8	75	S	12.8	5.7	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.82	757.3	29.85	758.3	50.4	10.2	97	SW	29	13	.....	.....	10	.....	.....	1.472	37.4	Raining	
Christiania	29.93	760.1	30.07	763.8	52.9	11.6	84	SSE	0	0	.....	.....	9	.....	.....	0.004	0.1	.....	
Tromsö	29.44	747 8	29.48	748.9	47.8	8.8	78	SSW	13	6	.....	.....	10	.....	.....	0.417	10.6	Light rain	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.76	755.9	29.95	760.8	62.2	16.8	81	N	9.4	4.2	.....	.....	7	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.77	730.8	29.79	756.7	64.4	18.0	72	SSW	9.4	4.2	.....	.....	9	SW	.....	0.616	18.1	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.74	755.4	29.83	757.6	71.1	21.7	70	W	15.4	6.9	.....	.....	5	.....	.....	0.469	11.9	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.35	745.5	29.71	754.5	64.4	18.0	81	S	13.7	6.1	.....	.....	10	.....	.....	0.354	9.0	.....	The Staff.
Ponta Delgada, (Azores)	29.78	756.3	29.85	758.1	66.2	19.0	60	W	11.9	5.3	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	.....	.....	29.93	760.1	81.5	27.5	.....	N	.....	.....	2	.....	3	.....	NE	2	.....	D. clouds...	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.58	751.3	30.00	761.9	59.9	15.5	77	SE	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.79	756.6	30.21	767.2	59.2	15.1	68	SE	4	2	.....	.....	1	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	30.01	762.2	30.25	768.4	56.8	13.8	72	S	7	3	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Weibrauch.
St. Petersburg	30.19	766.7	30.20	767.1	56.5	13.6	71	WNW	7	3	.....	.....	0	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.56	750.8	30.20	767.0	54.9	12.7	52	SE	7	3	.....	.....	3cs;cs;ks	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.14	765.5	30.21	767.3	61.9	16.6	55	ENE	4	2	.....	.....	5s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.17	766.3	30.19	766.8	64.0	17.8	75	SE	7	3	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.83	757.7	30.38	771.8	56.3	13.5	69	N	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	30.09	764.3	30.29	769.4	57.2	14.0	32	ESE	18	8	.....	.....	5s	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.77	756.2	29.79	756.7	42.6	5.9	88	SW	18	8	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sseliwerstow.
Tiflis	29.01	736.9	30.43	772.8	63.5	17.5	59	S	4	2	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.58	776.7	30.50	774.6	55.6	13.1	48	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.70	754.3	30.17	766.3	53.2	11.8	68	WNW	7	3	.....	.....	5k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.92	760.0	30.20	767.1	43.9	6.6	76	W	2	1	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	28.93	734 9	29.92	759.9	37.6	3.1	79	NW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.25	768.4	30.49	774.5	48.9	9.4	42	NNW	2	1	.....	.....	2ks	.....	.....	.....	.....	.....	
Tashkend	29.82	752.0	30.59	776.9	47.1	8.4	93	Calm	0	0	.....	.....	10	.....	.....	Blank	Blank	.....	Teich, A. M.
Barnaul	29.37	745.9	29.91	759.7	30.0	— 1.1	71	SW	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.47	748.6	29.76	756.0	43.5	6.4	64	SW	16	7	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Peking, (China)	30.01	762.2	30.15	765.8	54.1	12.3	71	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	30.19	766.8	30.28	769.0	36.5	2.5	93	Calm	0	0	.....	.....	10c	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 45° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.61	752.2	29.72	754.8	68.0	20	56	W	2.9	1.28	.....	2	1k	SE	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.63	752.6	29.69	754.0	72.0	22.2	53	W	1.1	0.48	.....	.....	1	SE	.....	0.114	2.9	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.81	681.0	.....	.....	59.0	15.0	72	SW	3.9	1.73	.....	.....	7	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.61	701.2	29.82	757.5	55.8	13.2	77	SW	3.7	1.67	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	29.69	754.0	29.84	757.8	71.8	22.1	59	SW	2.3	1.03	.....	3	5	E	.....	0.178	4.39	.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.69	728.6	29.66	760.9	60.3	15.7	72	SE	8.7	3.89	.....	.....	10	.....	.....	0	0	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.81	757.0	29.87	758.7	72.5	22.5	86	Calm	0	0	.....	1cs	0	SW	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.76	756.0	29.86	758.5	61.9	16.6	95	SE	25.5	11.4	.....	0	10	S	1.420	36.1	Raining	.....	
San Juan de Porto Rico, W. I.	29.78	756.3	29.87	758 6	79.2	26.2	91	SW	0	0	.....	2s	1k	SE	SE	0	0	Clear	Capt. C. Pujazon, R. N., Dir. Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.57	751.1	29.81	757.1	46.4	8.0	.....	SW	.....	.....	4	.....	1	.....	.....	0	0	.....	
Umea	29.95	760.8	30.00	762.1	47.1	8.4	81	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.97	761.3	30.02	762.6	48.2	9.0	78	Calm	.....	.....	0	.....	8	.....	.....	0	0	Foggy	
Stockholm	29.96	760.9	30.13	765.4	54.5	12.5	90	NW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Wisby	30.06	763.5	30.12	765.0	57.9	14.4	72	S	.....	.....	4	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.03	762.8	30.11	764.7	51.8	11.0	88	SW	.....	.....	.....	.....	10	.....	.....	0.004	0.10	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.35	720.1	29.75	755.7	62.4	16.9	70	NNE	.....	.....	1	.....	7	.....	.....	0	0	Covered	The Observatory.
Zurich	28.21	716.6	29.83	757.6	60.8	16.0	78	E	.....	.....	2	.....	6	.....	.....	0.228	5.8	Cloudy	The Observatory.
.....																			
.....																			
.....																			

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.0 mm.; Thermometer, +4.5 cent.; Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.16	766.0	66.6	19.2	70	ESE	2	1.0	.....	.....	4	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.20	767.1	73.8	23.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.94	760.5	30.05	763.3	82.0	27.8	51	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....																			
.....																			
.....																			

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.82	757.4	29.88	758.9	61.9	16.6	83	S	25	11.2	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.56	750.8	29.87	758.7	45	7.2	.....	SW	1	0.4	.....	.....	10n	.....	W	0.10	2.5	Light rain	W. R. Bigg.
*Chatham, N B	29.92	760.0	29.98	761.5	59	15.0	88	S	10	4.5	.....	2k	2ks	SW	SW	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.03	762.7	30.07	763.8	59	15.0	91	S	8	3.6	.....	0	5ks	.....	S	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.64	752.8	29.84	757.9	48.2	9.0	91	W	.....	.....	1	.....	10n	.....	.....	0.130	3.30	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.75	755.6	29.91	759.7	48.7	9.3	100	S	.....	.....	1	.....	.....	.....	.....	0	0	Foggy	H. A. Johnson.
Esquimault, B. C	29.66	753.4	29.70	754.4	51.3	10.7	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.32	8.1	Overcast	W. H. Bevis.
*Father Point, Quebec	29.70	754.4	29.73	755.1	61	16.1	72	S	30	13.4	.....	0	2s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	29.96	761.0	30.02	762.5	57.2	14.0	94	S	2	0.9	.....	.....	10s	.....	.....	0.22	5.6	Overcast	Prof. Harrison.
*Fort Garry Manitoba	29.23	742.4	30.10	764.5	24	— 4.4	87	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James Grant.
*Halifax, N. S	28.77	730.7	29.90	759.4	37	2.8	.....	SW	.....	.....	1	0	0	.....	.....	0.76	19.3	Clear	F. Allison, M. A.
Hamilton, Ontario	29.98	761.5	30.12	765.0	55	12.8	99	SE	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy	Geo. Dickson, M. A.
Heart's Content, N. F	29.60	749.3	29.87	758.7	44.7	7.1	76	SW	.....	.....	3	8ck	0	.....	.....	0	0	Clearing	E. Weedon.
*Kingston, Ontario	30.07	763.8	30.09	764.3	53	11.7	90	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast	S. Woods, M. A.
Little Glace Bay, N. S	29.53	750.0	29.87	758.7	46	7.8	90	W	2	0.9	.....	.....	10n	.....	SW	0.34	8.6	Light rain	C. H. Rigby.
*Montreal, Quebec	30.06	763.5	30.10	764.5	57.4	14.1	96	SW	7	3.1	.....	0	0	.....	.....	0.10	2.5	Clear	O. H. McLeod, C. E.
*Parry Sound, Ontario	29.66	753.4	29.88	758.4	50	10.0	88	N	8	3.6	.....	0	10n	.....	W	0.19	4.8	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.11	739.4	29.80	756.9	44	6.7	80	W	7	3.1	.....	2k	2ks	W	W	0.79	20.1	Fair	J. F. Jeffers, B. A.
Port Dover, Ontario	29.00	736.6	29.74	755.4	45.7	7.6	92	S	.....	.....	1	.....	10ks	.....	.....	0.36	8.9	Overcast	H. Morgan.
Port Hastings, N. S	29.19	741.4	29.89	759.2	43	6.1	92	Calm	0	0	.....	10k	0	SW	.....	0.46	11.7	Cloudy	Peter Grant.
Port Stanley, Ontario	30.07	763.8	30.12	765.0	62.6	17.0	.....	Calm	0	0	.....	.....	.....	.....	.....	0	0	Fine	M. Payne.
*Quebec, Quebec	29.25	742.9	29.90	759.4	40	4.4	80	W	4	1.8	.....	5k	0	SW	.....	0.88	22.4	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.50	749.3	29.81	757.2	54	12.8	100	NW	.....	.....	1	.....	10n	.....	NW	0.01	0.3	Light rain	W. H. McIntyre.
St. Andrews, N. B	29.35	745.5	29.81	757.2	44	6.7	94	Calm	0	0	.....	.....	5s	.....	SW	0.58	14.7	Fair	Dr. Gove.
St. John, N. B	29.96	761.0	30.01	762.2	56	13.3	98	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.89	759.2	30.05	763.3	53	11.7	100	S	.....	.....	.....	.....	Fog	.....	.....	0.23	5.8	Foggy	K. Stewart.
Stayner, Ontario	29.11	739.4	29.83	757.7	44	6.7	80	W	10	4.5	.....	.....	10n	.....	NW	0.13	3.3	Cloudy	R. J. Cole.
Stratford, Ontario	29.04	737.6	29.83	757.7	42	5.6	83	S	8	3.6	.....	8k	0	NW	.....	0.38	9.7	Cloudy	C. J. MacGregor, M.
*Sydney, C. B	29.56	725.4	29.86	758.4	39.0	3.9	91	W	11.0	4.9	.....	.....	5s	.....	.....	0.891	22.63	Fair	T. C. Hill.
*Toronto, Ontario	30.11	764.8	30.14	765.5	64	17.8	80	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	29.48	748.8	29.86	758.4	44	6.7	77	SW	1	0.4	.....	.....	10ks	.....	W	0.24	6.1	Cloudy	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	30.05	763.3	30.21	767.3	53	11.7	93	W	.....	.....	.....	0	0	.....	.....	Inap.	Inap.	Fair	John Delany.
.....																			
.....																			
.....																			

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,025 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From —	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er. 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From -	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.63	752.6	29.86	758.4	54	12.2	87	W	5	2.2	.....	.....	10n	.....	SW	0.16	4.1	Light rain...	
Alpena, Michigan	29.15	740.4	29.80	756.9	41	5.0	83	W	8	3.6	.....	2cs	2s	SW	W	0	0	Fair.....	
Atlanta, Georgia	28.85	732.8	30.01	762.2	46	7.8	85	NW	10	4.5	.....	0	Fog	.....	Calm	0.25	6.3	Clear.....	
Atlantic City, New Jersey	29.76	755.9	29.78	756.4	65	18.3	94	S	14	6.3	.....	8k	0	S	.....	0.06	1.5	Fair.....	
Augusta, Georgia	29.81	757.2	29.99	761.7	55	12.8	68	N	4	1.8	.....	2k	0	N	.....	0.02	0.5	Fair.....	
Baltimore, Maryland	29.82	757.4	29.87	758.7	53	11.7	93	N	6	2.7	.....	.....	10n	.....	N	0.08	2.0	Light rain...	
Barnegat, New Jersey	29.77	756.1	29.79	756.7	64	17.8	94	SE	24	10.7	.....	.....	10n	.....	SW	Inap.	Inap.	Light rain...	
Bismarck, Dakota	28.17	715.5	30.03	762.7	34	1.1	79	SE	6	2.7	.....	2cs	0	NW	.....	0	0	Clear.....	
Boerne, Texas	28.84	732.5	.....	.....	51	10.6	65	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Boise City, Idaho	27.19	690.6	30.15	765.8	43	6.1	75	NW	4	1.8	.....	2k	0	Calm	.....	0	0	Fair.....	
Boston, Massachusetts	29.76	755.9	29.91	759.7	65	18.3	81	S	11	4.9	.....	5cs;k	Haze	Calm;SW	Calm	0	0	Fair.....	
Brackettville, Texas	29.15	740.4	30.21	767.3	49	9.4	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Breckenridge, Minnesota	29.14	740.1	30.20	767.1	27	— 2.8	88	S	6	2.7	.....	5cs	0	Calm	.....	Inap.	Inap.	Fair.....	
Brownsville, Texas	30.17	766.3	30.24	768.1	58	14.4	88	N	4	1.8	.....	5cs	0	Calm	.....	0.30	7.6	Fair.....	
Buffalo, New York	29.18	741.2	29.88	758.9	43	6.1	92	W	6	2.7	.....	.....	10n	.....	NW	0.86	21.8	Light rain...	
Burkes, Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington, Vermont	29.63	752.6	29.88	758.9	53	11.7	93	N	8	3.6	.....	.....	10n	.....	Calm	0.60	15.2	Light rain...	
Cairo, Illinois	29.72	754.9	30.13	765.3	45	7.2	61	NW	12	5.4	.....	0	2ks	.....	NW	0	0	Fair.....	
Camp Apache, Arizona	24.65	626.1	29.65	753.1	33	0.6	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Camp Grant, Arizona	25.28	642.1	30.08	764.0	59	15.0	13	E	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Camp Verde, Arizona	26.88	682.7	30.36	771.1	37	2.8	38	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Camjo, California	27.40	696.0	29.97	761.2	34	1.1	69	E	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Cape Hatteras, N. Carolina	29.84	757.9	29 84	757.9	68	20.0	90	Calm	0	0	.....	0	8s	.....	SW	0	0	Cloudy.....	
Cape Henry, Virginia	29.76	755.9	29.78	756.4	67	19.4	89	SE	14	6.3	.....	.....	10s	.....	SE	0	0	Threatening	
Cape Lookout, N. Carolina	29.82	757.4	29.83	757.7	73	22.8	81	SW	20	8.9	.....	.....	10ks	.....	SW	0.30	7.6	Threatening	
Cape May, New Jersey	29.79	756.7	29.82	757.4	59	15.0	88	NW	20	8.9	.....	.....	10s	.....	S	0.10	2.5	Cloudy	
Castroville, Texas	29.52	749.8	30.26	768.6	50	10.0	52	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Charleston, South Carolin.	29.87	758.7	29.94	760.5	62	16.7	88	NW	7	3.1	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy.....	
Cheyenne, Wyoming	24.18	614.2	30.12	765.0	33	0.6	61	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Chicago, Illinois	29.28	743.7	29.98	761.5	40	4.4	73	NW	10	4.5	.....	2k	0	N	.....	0	0	Clear.....	
Cincinnati, Ohio	29.35	745.5	30.01	762.2	45	7.2	61	NW	12	5.4	.....	.....	10s	.....	NW	0.28	7.1	Cloudy.....	
Cleveland, Ohio	29.20	741.7	29.93	760.2	43	6.1	67	SW	10	4.5	.....	.....	10s	.....	Calm	1.04	26.4	Cloudy.....	
Coleman City, Texas	28.50	723.9	30.21	767.3	49	9.4	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Columbus, Ohio	29.10	739.1	29.94	760.5	43	6.1	75	NW	4	1.8	.....	.....	10s	.....	NW	0.49	12.4	Cloudy.....	
Concho, Texas	28.37	720.6	30.13	765.3	37	2.8	45	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Corsicana, Texas	29.84	757.9	30.32	770.1	45	7.2	76	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Davenport, Iowa	29.52	749.8	30.18	766.6	38	3.3	72	NW	4	1.8	.....	4k	0	N	.....	0.01	0.3	Fair.....	
Decatur, Texas	29.12	739.6	30.32	770.1	52	11.1	73	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
Denison, Texas	29.60	749.3	30.32	770.1	46	7.8	69	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Denver, Colorado	24.97	634.2	30.19	766.8	34	1.1	43	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Des Moines, Iowa	29.33	745.0	30.26	768.6	29	— 1.7	78	NW	3	1.3	.....	0	Haze	.....	Calm	0	0	Clear.....	
Detroit, Michigan	29.21	741.9	29.89	759.2	40	4.4	73	W	8	3.6	.....	.....	10s	.....	W	0.05	1.3	Cloudy.....	
Dodge City, Kansas	27.59	700.8	29.96	761.0	38	3.3	45	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Dubuque, Iowa	29.43	747.5	30.15	765.8	39	3.9	55	N	8	3.6	.....	5k	0	N	.....	Inap.	Inap.	Fair.....	
Duluth, Minnesota	29.48	748.8	30.18	766.6	33	0.6	70	NW	4	1.8	.....	0	0	.....	.....	0.19	4.8	Clear.....	
Eagle Pass, Texas	29.53	750.0	30.30	769.6	47	8.3	70	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Eastport, Maine	29.94	760.5	30.01	762.2	55	12.8	93	S	7	3.1	.....	.....	Fog	.....	S	0	0	Foggy	
Edinburg, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
El Paso, Texas	.....	.....	.....	.....	62	16.7	36	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Erie, Pennsylvania	29.16	740.7	29.88	758.9	46	7.8	92	W	8	3.6	.....	.....	10n	.....	NW	0.96	24.4	Light rain...	
Escanaba, Michigan	29.31	744.5	29.98	761.5	35	1.7	80	NW	11	4.9	.....	0	5s	.....	NW	0	0	Fair.....	
Florence, Arizona	28.43	722.1	30.03	762.7	70	21.1	13	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Fort Craig, New Mexico	25.72	653.3	29.78	756.4	34	1.1	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort Davis, Texas	25.40	645.2	30.36	771.1	66	18.9	20	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Fort Gibson, Indian Ter	29.76	755.9	30.33	770.4	35	1.7	80	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear.....	
Fort Griffin, Texas	29.01	736.8	30.34	770.6	41	5.0	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Fort McKavett, Texas	28.06	712.7	30.03	762.7	49	9.4	57	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.03	737.3	30.19	766.8	40	4.4	73	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Fredericksburg, Texas	28.54	724.9	30.10	764.5	66	18.9	23	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Galveston, Texas	30.20	767.1	30.24	768.1	60	15.6	65	N	14	6.3	.....	2c	0	Calm	.....	0	0	Clear.....	
Graham, Texas	29.21	741.9	30.32	770.1	38	3.3	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Grand Haven, Michigan	29.28	743.7	29.93	760.2	42	5.6	83	NE	12	5.4	.....	.....	10n	.....	Calm	0.53	13.5	Light rain...	
Indianapolis, Indiana	29.22	742.2	30.01	762.2	42	5.6	74	NW	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy.....	
Indianola, Texas	30.26	768.6	30.29	769.4	61	16.1	50	NE	24	10.7	.....	0	0	.....	.....	0	0	Clear.....	
Jacksboro, Texas	29.11	739.4	30.28	769.1	44	6.7	16	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Jacksonville, Florida	29.94	760.5	29.96	761.0	64	17.8	68	NW	5	2.2	.....	5k	0	W	.....	0	0	Fair.....	
Keokuk, Iowa	29.53	750.0	30.17	766.3	37	2.8	71	NW	10	4.5	.....	0	0	.....	.....	0.01	0.3	Clear.....	
Key West, Florida	29.86	758.4	29.89	759.2	76	24.4	77	NE	4	1.8	.....	2c	1s	NW	Calm	0.06	1.5	Fair.....	
Kittyhawk, North Carolina	29.80	756.9	29.82	757.4	67	19.4	89	S	12	5.4	.....	2cs	0	S	.....	0.11	2.8	Fair.....	
Knoxville, Tennessee	29.03	737.3	30.06	763.5	42	5.6	91	W	5	2.2	.....	0	Fog	.....	W	0.40	10.2	Fair.....	
La Crosse, Wisconsin	29.41	747.0	30.17	766.3	36	2.2	80	N	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	
La Mesilla, New Mexico	26.26	667 0	30.40	772.1	38	3.3	46	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Laredo, Texas	29.85	758.2	30.20	767.1	50	10.0	65	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Lead City, Dakota	24.86	631.4	30.14	765.5	42	5.6	66	SW	12	5.4	.....	0	5s	.....	Calm	0	0	Fair.....	
Leavenworth, Kansas	29.41	747.0	30.30	769.6	35	1.7	70	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Los Angeles, California	29.54	750.3	29.88	758.9	53	11.7	36	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Louisville, Kentucky	29.45	748.0	30.02	762.5	45	7.2	63	W	8	3.6	.....	.....	10s	.....	SW	0.15	3.8	Cloudy.....	
Lynchburg, Virginia	29.23	742.4	29.96	759.4	50	10.0	78	NW	4	1.8	.....	.....	10n	.....	Calm	0.46	11.4	Light rain...	
Madison, Wisconsin	29.07	738.4	30.08	764.0	37	2.8	71	NW	24	10.7	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	
Marquette, Michigan	29.27	743.4	29.99	761.7	36	2.2	100	W	16	7.2	.....	.....	10n	.....	Calm	0.26	6.6	Sleeting.....	
Mason, Texas	28.63	727.2	30.45	773.7	42	5.6	65	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.26	743.2	30.01	762.2	36	2.2	80	NW	21	9.4	.....	0	2s	.....	Calm	Inap.	Inap.	Fair.....	
Mobile, Alabama	30.12	765.0	30.16	766.1	50.5	10.3	75	N	5	2.2	.....	1c	0	W	.....	0.46	11.4	Clear.....	
Montgomery, Alabama	29.87	758.7	30.11	764.8	48	8.9	85	NW	4	1.8	.....	0	0	.....	.....	0.21	5.3	Clear.....	
Morgantown, West Virginia	28.86	733.0	29.91	759.7	49	9.4	85	SW	4	1.8	.....	.....	10s	.....	SW	0.41	10.4	Cloudy.....	
Mt. Washington, N. H.	23.70	602.0	30.03	763.5	44	6.7	100	SW	75	33.5	.....	.....	10n	.....	SW	0.27	6.9	Light rain...	
Nashville, Tennessee	29.56	750.8	30 11	764.8	44	6.7	76	W	6	2.7	.....	0	Haze	.....	Calm	0.11	2.8	Clear.....	
New Haven, Connecticut	29.72	754.9	29.84	757.9	66	18.9	89	S	15	6.7	.....	.....	10n	.....	S	0.01	0.3	Light rain...	
New London, Connecticut	29.85	758.2	29.99	759.4	65	18.3	89	SE	4	1.8	.....	2ck	5s	S	SE	0	0	Fair.....	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	65	18.3	49	NW	13	5.8	.....	0	0	.....	.....	0	0	Clear.....	
Newport, Rhode Island	29.86	758.4	29.91	759.7	63	17.2	89	SE	14	6.3	.....	4k	0	S	.....	0	0	Fair.....	
New York, New York	29.66	753.4	29.83	757.7	62	16.7	83	NW	6	2.7	.....	.....	10n	.....	S	Inap.	Inap.	Light rain...	
Norfolk, Virginia	29.74	755.4	29.80	756.9	68	20.0	84	S	10	4.5	.....	8k	0	S	.....	0	0	Cloudy.....	
North Platte, Nebraska	27.27	692.6	29.95	760.7	31	—0.6	69	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Olympia, Washington Ter.	29.77	756.1	29.81	757.2	56	13.3	87	S	6	2.7	.....	.....	10n	.....	Calm	0.05	1.3	Light rain...	
Omaha, Nebraska	29.14	740.1	30.28	769.1	30	— 1.1	78	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.58	751.3	29.90	759.4	50	10.0	86	W	12	5.4	.....	.....	10n	.....	.....	0.42	10.7	Light rain...	
Pembina, Dakota	29.22	742.2	30.09	764.3	26	— 3.3	100	S	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear.	
Philadelphia, Pa	29.78	756.4	29.83	757.7	56	13.3	81	NW	15	6.7	.....	.....	10n	.....	NW	0.05	1.3	Light rain...	
Phœnix, Arizona	28.79	731.3	.....	.....	53	11.7	48	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	
Pike's Peak, Colorado	17.97	454.8	30.18	766.6	21	— 6.1	9	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.17	613.9	29.94	760.5	38	3.3	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear...	
Pittsburg, Pennsylvania	29.11	739.4	29.92	760.0	45	7.2	84	SW	4	1.8	.....	.....	10s	.....	W	0.33	8.4	Cloudy.....	
Port Huron, Michigan	29.21	741.9	29.88	758.9	39	3.9	82	SW	9	4.0	.....	8ck	2ks	W	Calm	0.08	2.0	Cloudy.....	
Portland, Maine	29.88	758.9	29.93	760.2	59	15.0	82	S	8	3.6	.....	5k	Haze	S	.....	0	0	Fair	
Portland, Oregon	29.88	758.9	29.93	761.5	53	11.7	93	E	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy.....	
Prescott, Arizona	24.88	631.9	30.24	768.1	35	1.7	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.61	749.5	30.36	771.1	48	8.9	63	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Punta Rassa, Florida	29.91	759.7	29.93	760.2	73	22.8	85	NE	6	2.7	.....	2k	0	NE	.....	0	0	Clear.....	
Red Bluff, California	29.61	752.1	29.96	761.0	50	10.0	79	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Rio Grande City, Texas	30.10	764.5	30.33	770.4	54	12.2	80	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Rochester, New York	29.20	743.2	29.87	758.7	44	6.7	92	SW	4	1.8	.....	.....	10s	.....	SW	0.40	10.2	Cloudy.....	
Roseburg, Oregon	29.47	748.5	30.04	763.0	45	7.2	100	E	2	0.9	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.86	758.4	29.95	760.7	50	10.0	90	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
St. Louis, Missouri	29.58	751.3	30.17	766.3	40	4.4	73	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.03	762.7	30.04	763.0	56	13.3	51	N	16	7.2	.....	1ck	2s	N	N	0	0	Fair	
St. Paul, Minnesota	29.31	744 5	30.18	766.6	33	0.6	69	NW	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	
Salt Lake City, Utah	25.80	655.3	30.13	765.3	37.0	2.8	81	E	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.60	751.8	30.20	767.1	53	11.7	48	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
San Diego, California	29.85	758.2	29.92	760.0	53	11.7	48	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Sandusky, Ohio	29.28	743.7	29.96	761.0	42	5.6	66	W	18	8.0	.....	1k	2ks	W	Calm	0.40	10.2	Fair.....	
Sandy Hook, New Jersey	29.79	756.7	29.82	757.4	66	18.9	84	SW	8	3.6	.....	.....	10ks	.....	S	Inap.	Inap.	Cloudy.....	
San Francisco, California	29.87	758.7	29.94	760.5	58	14.4	76	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.40	595.9	30.00	762.0	36	2.2	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Savannah, Georgia	29.86	758.4	29.95	760.7	68	14.4	76	NW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy.....	
Shreveport, Louisiana	30.06	763.5	30.29	769.4	48	8.9	85	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Silver City, New Mexico	24.45	621.0	.....	.....	37	2.8	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Smithville, North Carolina	29.80	756.9	29.83	757.7	72	22.2	90	S	14	6.3	.....	.....	10s	.....	SW	0.59	15.0	Cloudy.....	
Springfield, Massachusetts	29.71	754.6	29.83	757.7	65	18.3	89	S	12	5.4	.....	.....	10s	.....	S	0	0	Cloudy.....	
Stockton, Texas	27.20	690.9	30.20	767.1	46	7.8	54	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	29.87	758.7	29.92	760.0	57	13.9	94	S	14	6.3	.....	0	1s	.....	SW	0	0	Clear.....	
Toledo, Ohio	29.24	742.7	29.92	760.0	42	5.6	66	SW	8	3.6	.....	0	8s	.....	SW	0.65	1 8	Cloudy.....	
Tucson, Arizona	.....	.....	.....	.....	58	14.4	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.92	760.0	29.95	760.7	59	15.0	88	NW	19	8.5	.....	.....	10ks	.....	NW	0.02	0.5	Cloudy.....	
Umatilla, Oregon	29.53	750.0	.....	.....	47.5	8.6	82	SE	7	3.1	.....	.....	10ks	.....	W	0	0	Cloudy.....	
Unalashka, Aleutian Islands	.....	.....	.....	.....	33	0.6	100	W	.....	.....	2	.....	10s	.....	NW	0.30	7.6	Cloudy.....	
Uvalde, Texas	29.99	746.5	30.23	767.8	48	8.9	49	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Vicksburg, Mississippi	30.01	762.2	30.27	768.8	49	9.4	71	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Virginia City, Montana	24.31	617.5	29.79	756.7	38	3.3	72	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.61	752.1	29.99	761.7	47	8.3	92	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	29.77	756.1	29.88	758.9	52	11.1	100	N	7	3.1	.....	.....	10n	.....	N	0.36	9.1	Light rain...	
Wickenburg, Arizona	.....	.....	.....	.....	44	6.7	68	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	
Wilmington, N. Carolina	29.74	755.4	29.82	757.4	69	20.6	90	S	6	2.7	.....	.....	10s	.....	S	0.04	1.0	Cloudy.....	
Winnemucca, Nevada	25.70	652.8	30.06	763.5	32	0.0	89	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Woods Holl, Mass	29.87	758.7	29.92	760.0	64	17.8	89	SE	10	4.5	.....	0	8s	.....	.....	0	0	Cloudy.....	
Yankton, Dakota	28.96	735.6	30.34	770.6	23	— 5.0	67	E	1	0.4	... ...	1cs	0	NW	.....	0	0	Clear.....	
Yuma, Arizona	29.70	754.4	29.86	758.4	56	13.3	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Fortescue, W. Wood.
York Factory, B. A	29.89	759.2	29.94	760.5	25.0	— 3.9	94	NW	14	6 3	.....	2c	0	W	.....	0	0	Fair	Chas. Hasselbrink.
Havana, Cuba, W. I	29.96	761.0	29.88	758.9	77	25.0	76	SE	1.2	0.5	.....	0	0	.....	.....	0	0	Clear.....	Robert Mason.
Santiago de Cuba, W. I	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Thomas, W. I	.....	.....	.....	.....	86	30.0	72	Calm	0	0	.....	2c	0	NE	.....	0.02	0.5	Clear.....	G. O. Gellich.
Kingston, Jamaica, W. I	29.99	761.7	30.00	762.0	78	25.6	90	Calm	12.1	5.4	.....	2c	2ks	Calm	S	0	0	.....	James Gall.
Navassa, W. I	29.77	756.1	29.85	758.2	78.5	25.8	.....	E	.....	.....	.....	.....	.....	.....	.....	0.34	8.6	Raining.....	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.95	760.7	29.96	761.0	84	28.9	73	E	.....	.....	3	4c	5k	E	.....	0	0	Fair.....	O. J. Hering
Medellin, Colombia, S. A	25.20	640.1	.....	.....	65.5	18.6	85	Calm	0	0	.....	4cs;k	3ks	.....	.....	0.03	0.8	.....	Thomas Herran.
Portland, Jamaica, W. I	29.77	756.1	30.06	763.5	77	25.0	85	E	.....	.....	.....	c	.....	.....	.....	.....	.....	Fine.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066,8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.: Graham, 1,040 (?) ft., or 317.0 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.: Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.: Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.20	767.1	66	18.3	66	18.3	69	NW	3	1.3	.....	.....	2	.....	SW	0	0	.....	.....	Fair	
Navy Yard, Portsmouth, N.H	29.82‡?	757.4‡?	.....	.....	58	14.4	88	SSW	2	0.9	.....	.....	10	.....	.....	0.02	0.5	.....	.....	Cloudy	
Naval Hospital, Yokohama, Japan	30.26*	768.6*	65	18.3	60.5	15.8	85	NW	.....	.....	2	.....	10ks	.....	S	0	0	.....	.....	Cloudy	
Adams. Valparaiso, Chili	30.03	762.7	65	18.3	59	15.0	76	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Fair	
Alaska, S. 12° 05′ W. 77° 17′	30.09	764.3	65	18.3	64	17.8	79	ESE	.....	.....	2	.....	10	.....	SE	0	0	Smooth	.....	D. clouds	
Alliance, Smyrna, Turkey	30.09‡	764.3‡	.....	.....	73	22.8	58	W	.....	.....	2-3	.....	2	.....	W	.....	.....	.....	.....	Hazy	
Ashuelot, Nagasaki, Japan	30.18	766.6	67	19.4	67	19.4	84	WNW	.....	.....	2	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
Canonicus, New Orleans, La	30.10	764.5	47	8.3	63	17.2	52	N	.....	.....	6	.....	4	.....	.....	.....	.....	...	.....	Fair	
Colorado, New York, N. Y.	29.83‡	757.7‡	.....	.....	64	17.8	89	WNW	3	1.3	.....	.....	10	.....	S	0.01	0.3	.....	.....	Rainy	
Constitution, Havre, France	.....	.....	.....	.....	58	14.4	88	E	.....	.....	2	.....	3	.....	ESE	.....	.....	.....	.....	Pleasant	
Despatch, Constantinople, Turkey	30.18‡	766.6‡	.....	.....	72	22.2	76	SW	.....	.....	2	.....	2	.....	S	.....	.....	.....	.....	Clear	
Essex, About S. 36° 30′, E. 13°	30.13	765.3	59	15.0	57	13.9	94	WNW	.....	.....	2	.....	8	.....	S	.....	.....	Smooth	.....	Cloudy	
Franklin, Norfolk, Va.	29.91	759.7	71	21.7	69	20.6	??	SSE	8.5	3.8	.....	.....	8	.....	SW	0	0	.....	.....	Cloudy	
Gettysburg Port Said, Egypt	29.98‡	761.5‡	.....	.....	80	26.7	100	NNE	.....	.....	3	.....	0	.....	.....	0	0	Smooth	NW	Blue sky	
Guard. N. 6° 26′, W. 40° 20′	29.99	761.7	84	28.9	84	28.9	83	E	.....	.....	3	.....	5	.....	E	.....	.....	Long	E	Fair	
Hartford, Santos, Brazil	30.09	764.3	74	23.3	71	21.7	95	Calm	0	0	.....	.....	10	.....	.....	0.12	3.0	Smooth	.....	Cloudy	
Marion, Trieste, Austria	30.03	762.7	64	17.8	60	15.6	100	Calm	.....	.....	0	.....	10	.....	Calm	Light	Light	.....	.....	Drizzling	
Michigan, Buffalo, N. Y.	29.93†	760.2†	.....	.....	45	7.2	84	WNW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Monocacy, Yokohama, Japan	30.28‡	769.1‡	.....	.....	62	16.7	83	NNW	.....	.....	2-3	.....	10	.....	NNW	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.	30.07	763.8	64	17.8	62	16.7	88	NW	18	8.0	.....	.....	8	.....	NW	0.01	0.3	.....	.....	Cloudy	
Onward, Callao, Peru	30.06†	763.5†	.....	.....	63	17.2	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.20	767.1	63	17.2	54	12.2	93	SSW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Passaic, Washington, D. C.	.....	.....	.....	.....	54	12.2	100	NE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Plymouth. N. 20° 22′, W. 63° 54′	30.03	762.7	83	28.3	83	28.3	75	E	.....	.....	2	.....	8	.....	N;E	.....	.....	Light	E	Bright	
Powhatan, Boston, Mass.	29.92‡	760.0‡	.....	.....	63	17.2	89	S	12.0	5.4	.....	.....	2	.....	S	0	0	.....	.....	Clear	
Quinnebaug, Newcastle, Del.	29.85‡	758.2‡	.....	.....	58	14.4	89	NNW	.....	.....	4	.....	10	.....	N	.....	.....	.....	.....	Misty	
Ranger. Hong-Kong, China	30.11	764.8	81	27.2	81	27.2	87	E	.....	.....	4	.....	10	.....	W	.....	.....	.....	.....	Rainy	
Rio Bravo, Brownsville, Texas	30.14	765.5	60	15.6	61	16.1	94	NW	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	29.82‡	757.4‡	.....	.....	54	12.2	93	N	.....	.....	2	.....	10	.....	.....	0.09	2.3	.....	.....	Light rain	
Saratoga, Philadelphia, Pa.	29.76	755.9	.....	.....	57	13.9	81	N	.....	.....	2	.....	10	.....	N	Light	Light	.....	.....	Raining	
St. Louis, League Island, Pa	29.78	756.4	63	17.2	57	13.9	87	NNW	7	3.1	.....	.....	10	.....	NE	0.1	3.	.....	.....	Cloudy	
Supply, Havre, France	29.72	754.9	59	15.0	59	15.0	82	ESE	.....	.....	1	.....	2	.....	ESE	.....	.....	...	.....	Clear	
Swatara, Boston, Mass.	29.91‡	759.7‡	.....	.....	63	17.2	89	SSW	.....	.....	2	.....	2	.....	SSW	.....	.....	.....	.....	Hazy	
Trenton, Villafranca, France	29.86‡	758.4‡	.....	.....	69	20.6	95	ENE	.....	.....	2-4	.....	10	.....	S;E	1.0	25.	.....	.....	Squally	
Vandalia, N. 38° 01′, E. 1° 34′	29.88‡	758.9‡	.....	.....	71	21.7	66	SW	.....	.....	5	.....	8	.....	SW	.....	.....	Mod'ate	SW	Clearing	
Wabash, Boston, Mass.	.....	.....	.....	.....	63	17.2	89	S	6	2.7	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 34° 20', E. 152° 31'		30.50*	774.7*	64	17.8	??	E			5		9		E		Mod'ate	E	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 17° 29', W. 101° 52'		29.92*	760.0*	82	27.8	87	NW			2		9		E	Blank	Mod'ate	SW	D. clouds	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.92*	760.0*	59	15.0	76	Calm			0		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.
NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.																			
WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic N. 47° 22', W. 33° 35'		29.90*	759.4*	54	12.2	??	NNW			6				N	Blank	Mod'ate	N	D. clouds	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic, N. 41° 56', W. 64° 22'		29.94*	760.5*	56	13.3	??	SE			4				NW	0	None		D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.																			
OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.																			
NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 37° 4', W. 75° 12'		29.78	756.4	68.5	20.3	84	SSE			3		5		S	0	1	S	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.																			

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		29.72*	754.9*	52	11.1	86	NW			1		10		N	Light			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		29.86	758.2	56.5	13.6	90	SE			1		9		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 34′ W. 15° 00′		29.56*	750.8*				SE	15	6.7			5		SE		Heavy	W	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Porto Cabello, Venezuela		29.84	757.9	81	27.2	78	Calm	0	0			2k		SE	0.88 in or 22.4 mm.			Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 19, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.98	761.5	76.5	24.7	49	NE	.....	.....	3	.....	1	.....	.....	0	0	Very fair.....	Kesxuche.
Algiers	.....	.....	29.96	760.9	76.6	24.8	50	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	Tourilliere.
La Calle	.....	.....	30.04	762.9	72.9	22.7	79	ENE	.....	.....	5	.....	1	.....	.....	0	0	Very fair. ...	Foufrede.
Tunis	.....	.....	30.02	762.4	77.2	25.1	73	E	.....	.....	4	.....	0	.....	.....	0.024	0.6	Clear	Jacques.
Sfax	.....	.....	30.10	764.5	80.6	27.0	.....	W	.....	.....	6	.....	6	.....	.....	0	0	Cloudy.....	Gau.
Saida	.....	.....	30.02	762.5	74.3	23.5	41	S	.....	.....	1	.....	2	.....	.....	0	0	Fair	Herbin.
Tebessa	.....	.....	30.01	762.3	77.0	25.0	26	W	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Watrin.
Geriville	.....	.....	30.02	762.6	70.5	21.4	57	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Brugniaux.
Laghouat	.....	.....	30.11	764.8	75.9	24.4	44	N	.....	.....	1	.....	1	.....	.....	0	0	Very fair.....	Bertrand.
Biskra	.....	.....	30.04	762.9	89.1	31.7	35	N	.....	.....	5	.....	1	.....	.....	0	0	Very fair.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.32	744.7	29.86	758.5	59.5	15.3	92	SW	.....	.....	3	.....	10	.....	.....	0.268	6.8	Raining.....	Prof. Ivan Storir.
Cracow, I. R. Observatory	29.04	737.7	29.80	757.0	57.6	14.2	95	ENE	.....	.....	1	.....	10	.....	.....	0.173	4.4	.....	Dr. Wierzbiski
Eperies	28.97	735.8	29.83	757.7	58.6	14.8	91	S	.....	.....	1	.....	10s	.....	N	0.079	2.00	.....	Julius Mikolik.
Gratz	28.55	725.1	29.77	756.2	61.3	16.3	88	NW	.....	.....	1	.....	5	.....	.....	0.061	1.55	.....	Andreas Rospini.
Hermannstadt	28.53	724.7	29.98	761.6	64.6	18.1	68	W	.....	.....	1	.....	9	.....	.....	0.028	0.70	.....	Prof. A. Gottschling.
Kremsmünster	28.50	723.9	29.83	757.6	64.9	12.7	87	NW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.89	733.7	29.86	758.5	56.3	13.5	97	SE	.....	.....	1	.....	10	.....	.....	0.122	3.1	.....	Dr. T. Stanecki.
Pola	29.78	756.3	29.89	759.1	66.6	19.2	87	WNW	.....	.....	2	.....	9ks	.....	.....	0.689	17.5	.....	I.R.Hydrographic Office.
Szathmar	29.48	748.8	29.93	760.3	66.2	19.0	72	SE	.....	.....	4	.....	10	.....	.....	0.142	3.6	.....	Julius Csics, S. J.
Szegedin	29.60	751.8	29.87	758.7	67.6	19.8	83	S	.....	.....	3	.....	10	.....	.....	0.055	1.40	.....	Karl Stancel.
Trieste	29.82	757.3	29.92	759.9	63.0	17.2	93	W	.....	.....	1	.....	10	.....	.....	1.654	42.0	Rain & fog..	P. Busin.
Vienna	29.12	739.6	29.83	757.6	56.3	13.5	87	WNW	.....	.....	2	.....	9	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.30	718.8	29.80	756.9	51.1	10.6	94	E	.....	.....	1	.....	10	.....	.....	0.138	3.5	Foggy.....	Prof. M. Passau.
Brussels	29.56	750.7	29.76	755.8	55.6	13.1	79	E	.....	.....	3	.....	9	.....	S	0	0	.....	Royal Observatory
Furnes	29.76	755.9	29.78	756.5	54.3	12.4	98	E	.....	.....	1	.....	10	.....	.....	0	0	Light fog....	M. E. de Cae
Maeseyck	29.69	754.0	29.82	757.3	56.7	13.7	72	E	.....	.....	4	.....	10	.....	.....	0	0	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

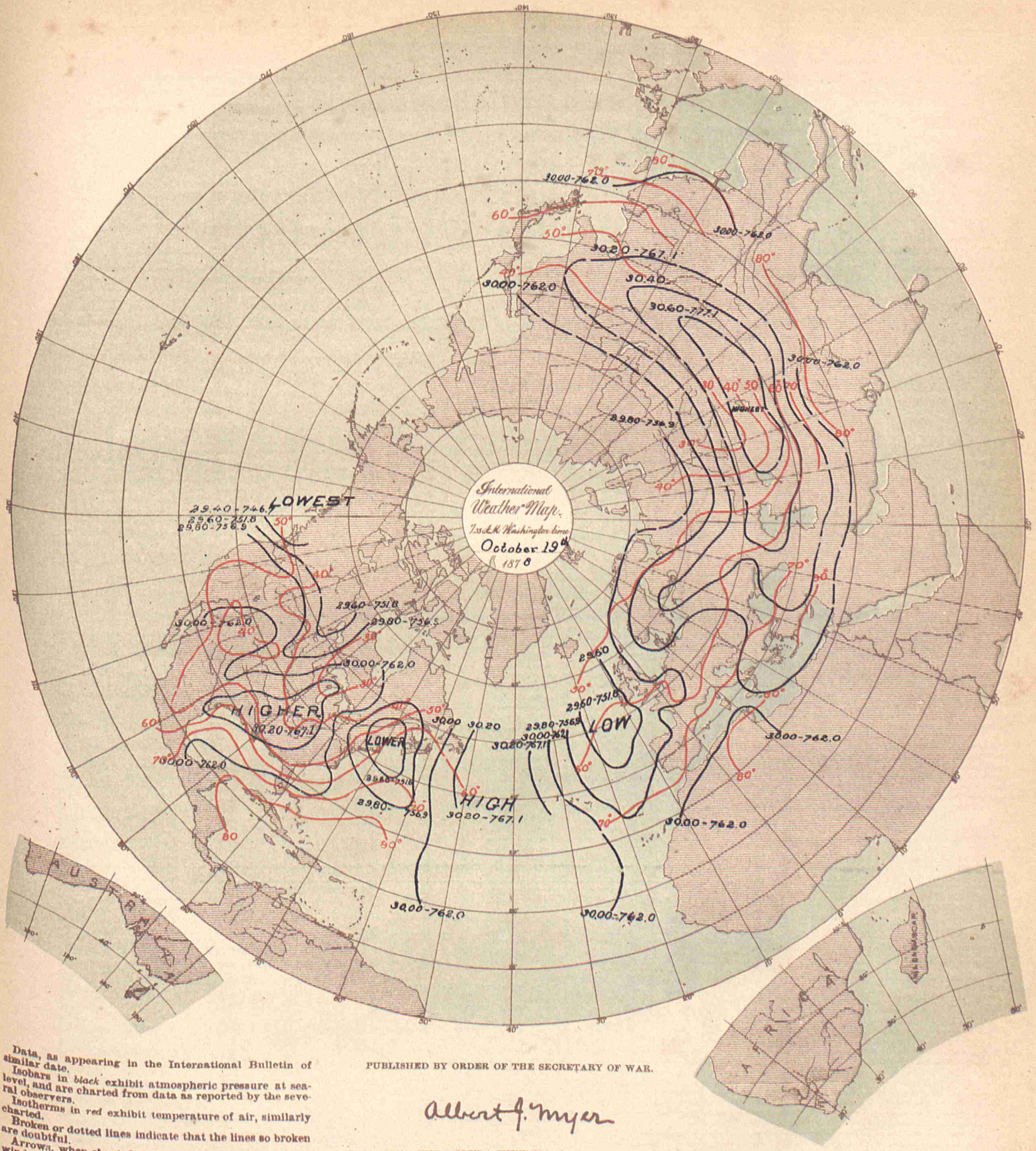
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.79	756.7	29.89	759.2	54.0	12.2	.....	SE	21	9.4	.....	.....	9	.....	.....	0	0	Overcast	W. Boswell.
Ardrossan	29.75	755.6	29.76	755.9	60	15.6	.....	SE	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds	George Carrick.
Armagh, Observatory	.....	.....	29.71	754.6	52.9	11.6	.....	SSE	6	2.7	.....	.....	10	.....	.....	.....	.....	Gloomy	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.77	756.1	55.0	12.8	.....	ESE	20	8.9	.....	.....	10	.....	.....	.....	.....	Misty	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.44	747.8	29.83	757.7	55.7	13.2	.....	E	.....	.....	3	.....	10	.....	.....	0	0	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.91	759.7	29.94	760.5	83.0	28.3	.....	SE	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.80	756.9	56.5	13.6	.....	SE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	H. Todd. [H. C.
Cardington	.....	.....	29.81	757.2	57.4	14.1	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.65	753.1	29.78	756.4	54.7	12.6	.....	E	.....	.....	2	.....	9	.....	.....	.....	.....	Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.22	716.8	29.67	753.6	52.2	11.2	.....	E	.....	.....	1	.....	8	.....	.....	.....	.....	Foggy	Alexander Watt.
Donaghadee	29.69	754.1	29.72	754.9	55	12.8	.....	SE	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast	J. Mac Gowan.
Dover	29.73	755.1	29.75	755.6	54	12.2	.....	E	.....	.....	4	.....	7	.....	.....	.....	.....	Misty	J. Costello.
Falmouth, Observatory	29.50	749.3	29.73	755.1	59.6	15.3	.....	S	.....	.....	1	.....	1	.....	.....	.....	.....	D. clouds	The Staff.
Fort Napier, (Natal)	27.48	698.0	29.80	756.9	84.6	29.2	.....	E	.....	.....	2	.....	0	.....	.....	.....	.....	Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.70	754.4	29.93	760.2	86	30.0	.....	E	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	.....
Galway, Queen's College	.....	.....	29.58	751.3	57	13.9	.....	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.97	761.2	.....	.....	.....	E	.....	.....	2	.....	5	.....	.....	.....	.....	Gloomy	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.58	751.3	29.79	756.7	58.0	14.4	.....	ESE	.....	.....	2	.....	7	.....	.....	.....	.....	Gloomy	D. G. Maclean.
Great Yarmouth	29.81	757.2	29.82	757.4	56	13.3	.....	E	.....	.....	5	.....	6	.....	.....	.....	.....	D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.61	752.1	29.78	756.4	56.9	13.8	.....	ESE	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	The Staff, for G. B. Airy.
Guernsey	29.52	749.8	29.73	755.1	60	15.6	.....	WNW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston	.....	.....	29.75	755.6	63	17.2	.....	S	.....	.....	0	.....	0	.....	.....	0	0	Fine	M. P. Moyle.
Holyhead	29.69	754.1	29.74	755.4	55	12.8	.....	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	John Tilston.
Jersey	29.49	749.0	29.77	756.1	59.9	15.5	.....	WNW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	J. Fisher.
Kew, Observatory	29.75	755.6	29.79	756.7	55.5	13.1	.....	E	17	7.6	.....	.....	9	.....	.....	.....	.....	Misty	The Staff.
Kingstown	29.68	753.9	29.71	754.6	55	12.8	.....	SE	.....	.....	4	.....	10	.....	.....	.....	.....	Drizzling	George Mitchell.
Leicester, Museum	.....	.....	29.80	756.9	56.1	13.4	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.93	760.2	30.00	762.0	79	26.1	.....	SSE	.....	.....	3	.....	6ks	.....	.....	.....	.....	Overcast	Sergt. Beckett.
Nairn	29.69	754.1	29.78	756.4	57	13.9	.....	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	¼ clouded	W. D. Penny.
Nassau, (Bahamas)	.....	.....	29.89	759.2	80.5	26.9	.....	SE	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.64	752.8	29.82	757.4	57.3	14.1	.....	SE	.....	.....	2	.....	10k	.....	E	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.27	743.4	29.78	756.4	54.8	12.7	.....	ENE	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.78	756.4	55	12.8	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Raining	H. E. Bellamy.
Plymouth	29.65	753.1	29.72	754.9	57.0	13.9	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	29.60	751.8	29.64	752.8	58	14.4	.....	SE	.....	.....	4	.....	8	.....	.....	.....	.....	Cloudy	W. Kennedy.
Saint Ann's Head	29.53	750.0	29.69	754.1	56	13.3	.....	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	Foggy	John C. Walker.
Sandwick Manse, (Orkneys.)	.....	.....	29.84	757.9	54.2	12.3	.....	SSE	27	12.1	.....	.....	8	.....	.....	.....	.....	D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	30.12	765.0	69.4	20.8	.....	SW	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.58	751 3	29.86	758.4	56.5	13.6	.....	E	.....	.....	1	.....	9	.....	.....	0.02	0.5	Overcast	W. F. Cooper.
Silloth, Rectory	29.75	755.6	29.78	756.4	59.5	15.3	70	SE	.....	.....	3	.....	4	.....	.....	0.020	0.51	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	29.42	747.3	29.82	757.4	56.0	13.3	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	Rev. S. J. Perry.
Straifield Turgiss	29.56	750.8	29.77	756.1	56.2	13.4	.....	E	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	Rev. C. H. Griffith, F. M. S
Thurso	29.75	755.6	29.81	757.2	54	12.2	.....	SSE	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	John Trotter.
Truro, Royal Institution	.....	.....	29.72	754.9	64	17.8	.....	SE	.....	.....	4	.....	7	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	29.53	750.0	29.56	750.8	59.6	15.3	.....	ESE	28	12.5	.....	.....	10	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.92	760.0	55.0	12.8	82	NW	.....	.....	3	.....	6k	.....	.....	0.04	1.0	.....	Francis Abbott, F. R. A. S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	78.0	25.6	62	WSW	11.5	5.1	.....	0	8	.....	SSW	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	30.05	763.3	30.14	765.5	53.8	12.1	81	SE	3	1.3	.....	.....	0	.....	.....	0	0	Very fine	R. L. J. Ellery.
Monach Light-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetow reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 43° 0', W. 51° 20'	.....	.....	30.29	769.4	51	10.6	.....	SE	.....	.....	3	.....	3	.....	.....	3	S	Misty	Capt. Alex. Wilson.
Barque Commewyne, N. 18° 20', W. 48° 40'	.....	.....	30.01	762.2	87	30.6	.....	E	.....	.....	2	.....	4	.....	.....	2	N	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Waring.
Barque Margaret Smith, N. 21° 45', W. 73° 0'	.....	.....	29.88	758.9	82	27.8	.....	.....	.....	.....	2	.....	5	SW	.....	.....	N	D. clouds	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.21	665.7	29.93	760.2	67.6	19.6	98	Calm			0		10s		NW	0.2	5.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,760.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.95	760.7	30.00	761.9	55.4	13.0	78	SE			4		1						
Faröe	29.95	760.6	29.97	761.1	57.0	13.9	85	ENE			4		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.71	754.6	29.74	755.5	52.3	11.3	93	S			4		10						
Vestervig	29.85	758.3	30.02	762.6	53.6	12.0	94	E			4		6					Foggy	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.24	742.8	29.80	756.8	66.6	19.2	96	SW			1		10			0.071	1.8	Covered	Collignon, Director.
Amiens, Normal School	29.65	753.2	29.76	755.9	62.6	17.0	81	NE			2		5		NW	0	0	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.84	757.9	29.92	759.9	68.5	20.3	57	S			1		0			0.04	1.	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.20	741.7	29.75	755 7	55.2	12.9	88	S			2		10		SW	0.220	5.6	Cloudy	C. Saillard.
Beauvais, Normal School	29.48	748.7	29.76	755.8	63.3	17.4	75	E			1		8	N	SSW	0	0	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.97	735.7	29.85	758.2	58.3	14.6	72	E			2		10		SW	0.307	7.8	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	29.06	738.0	29.97	761.3	56.8	13.8	79	S			4		8n		S	0.417	10.6	Very cloudy	M. Marlot, Director.
Bourges, Normal School	29.24	742.6	29.78	756.4	57.6	14.2	98	SW			1		10n		SW	0.346	8.80	Raining	A. Waquet, Director.
Brest, Naval Observatory	29.47	748.5	29.71	754.6	66.6	19.2	79	SW			1		9		SW	0.059	1.50		M.de Rermaur, Director.
Carcassonne, Normal School	29.49	749.0	29.89	759.3	66.2	19	72	W			3		5	W	W	2.44	62.	Cloudy	Septembre, Director.
Caen	29.67	753.5	29.74	755.4	61.9	16.6	73	W			1		8		W	0	0	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.29	744.0	29.69	754.0	63.7	17.6	86	SE			1		6		NE	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.43	747.4	29.74	755.5	59.4	15.2	85	S			2		8ck			0.079	2.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.49	723.6	29.82	757.5	58.3	14.6	80	SW			1		8		SW	0.606	15.4	Very cloudy	Alluard, Director.
Commercy, Normal School	28.95	735.3	29.82	757.4	56.3	13.5	88	SW			3		kn		SW	0.386	9.8		Dr. Coulet, Director.
Commune de Grésque*	28.82	732.0	29.96	761.0	65.3	18.5	56	SW			2		5	SW		0.946	24.0	½ covered	M. Kina.
Grenoble, Normal School	29.12	739.6	29.88	758.9	57.2	14	86	NNW			1		10n		S	0.20	5.	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.60	751.8	29.81	757.1	65.8	18.8	64	WNW			1		0			0.445	11.3	Clear	Mouillot, Director.
Le Mans, Normal School	29.48	748.8	29.78	756.5	60.8	16	83	NW			1		10		N	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.02	737.0	29.93	760.1	57.6	14.2	78	N			1		10		S	0.362	9.20	Covered	Baudry, Director.
Lorient, Naval Observatory	29.70	754.4	29.80	757.0	64.4	18.0	77	S			1				S	0.055	1.4		Lt T. Carré, Director.
Mâcon, Normal School	29.90	759.5	29.93	760.3	59.0	15	89	S			1		10			0.599	15.2	Covered	M. Galzin, Director
Mirecourt, Normal School	28.78	730.9	29.81	757.1	54.7	12.6	77	N			3		10n		S	0.32	8.	Covered	M. Barbier, Director.
Nismes, Normal School	29.71	754.5	29.90	759.5	69.1	20.6	69	SE			1		2		N	0.35	9.	Slightly cl'dy	Boyer, Director.
Orleans																			
Privas, Normal School	28.97	735.7	30.02	762.5	61.3	16 3	77	N			1		1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.02	635.6			42.8	6.0	100	W			4		Fog			0.307	7.8	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.78	756.5	29.82	757.3	66.6	19.2	77	SW			1		0			0	0	Clear	Lt. Decante, Director.
Rouen, Normal School	29.63	752.6	29.72	754.8	65.5	18.6	71	ENE			1		5		N	0	0	Cloudy	Frere Lucard, Director.
Saint Malo (Port)			29.77	756.1	62.2	16.8	81	W			1		8		W	0.020	0.50	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.58	751.2	29.74	755.4	64.4	18.0	71	S			1		8		ENE	0.094	2.4		E. Renou.
Tarbes, Normal School	28.78	730.9	29.80	757.0	60.8	16	79	W			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.19	741.3	29.89	759.2	58.8	14.9	85	N			1		5		NE	0.39	10.	Cloudy	M. Gausserand, Director
Sub-Series.																			
Fort de France, Martinique	29.86	758.5	29.89	759.2	79.2	26.2										0.51	13.		L'Abbé Marchési.
Lyons, Observatory			29.90	759.5	58.5	14.7	76						10			0.122	3.1		
Marseilles, Observatory			29.89	759.2	67.8	19.9	63	SE			1		6			Inap.	Inap.	½ covered	The Staff.
Mont-Louis	24.77	629.1	30.08	764.1	51.8	11.0	55	SSW			3		2		SE	1.319	33.5		M. Cave.
Nice			29.93	760.1	65.8	18.8	81	SW			2		10			1.390	35.3		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.45	748.1	29.73	755.1	65.1	18.4	73	SE			1		10		N	Inap.	Inap.		Marié Davy, Director
Perpignan			29.89	759.2	64.4	18.0	79	E	7.4	3.33			7		SE	0.012	0.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.45	570.3			45.3	7.4		WNW			3		5			0	0	Fair	Gen'l de Nansouty
Toulouse, Observatory	29.17	740.9	29.89	759.2	66.6	19.2	57	SE			2		5			0	0		B. Baillaud.
Tours	29.58	751.3	29.78	756.3	61.9	16.6	80	W			2		10		WNW	0	0		C. Marquet.
Versailles			29.74	755.5	64.8	18.2	63	SE			1		10			0.003	0.08	Covered	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.08	764.1	30.11	764.7	59.4	15.2	97	E	3.8	1.7		10ck				0	0	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.96	735.6	29.80	756.9	53.6	12.0	74	E			3		10			0	0	Foggy	Prof. Dr. Hoh.
Berlin	29.77	756.2	29.95	760.6	56.1	13.4	80	NE			1		10			0.091	2.3	Raining	Prof. Arndt.
Breslau	29.34	745.1	29.86	758.5	55.0	12.8	80	SE			1		6			0	0		Royal University Obs'y
Carlsruhe	29.39	746.6	29.82	757.3	54.5	12.5	94	NE			1		9			0.177	4.5	Raining	Albert Senx.
Cassel	29.24	742.8	29.85	758.1	57.6	14.2	58	ESE			2		8	ESE		0	0	Foggy	Dr. H. Möhl.
Crefeld	29.04	752.8	29.80	756.9	58.8	14.9	65	SE			4		10			0	0		Director Lose.
Emden	29.93	760.2	29.97	761.1	57.9	14.4	70	E			2		10			0	0		Prof. Prestel.
Frankfort on the Main	29.50	749.2	29.86	758.5	63.2	11.8		SSE			1		10			Inap.	Inap.	Raining	Physical Society.
Friedrichshafen	28.42	721.8	29.83	757.7	58.5	14.7	86	SW			4		8	SW		0.134	3.4		M. Wilhelm.
Hamburg	29.85	758.3	29.93	760.1	56.5	13.6	86	ESE			1		10ks			0	0	Light fog	Captain F. Hegemann.
Kiel	29.93	760.2	29.95	760.6	57.0	13.9	82	ENE			2		10			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.90	759.4	29.98	761.5	55.9	13.3	77	E			2		2			0	0		Prof. E. Luther.
Köslin			29.89	759.2	57.7	14.3		E			4		2			0.028	0.7		H. Müller.
Leipsic, Observatory	29.46	748.3	29.88	759.0	54.0	12.2	89	N			1		9	NE		0	0		Prof. Bruhns.
Memel, Naval School	30.01	762.2	30.06	763.4	57.2	14.0	58	E			2		0						Reinbrecht and Skalweit.
Neufahrwasser	29.96	761.0	29.98	761.4	55.2	12.9	78	ENE			3		4			0	0		A. Lothes.
Posen	29.64	752.8	29.93	760.2	52.3	11.3	98	N			2		10			0.020	0.5		Dr. Magener.
Strassburg (in Alsace)	29.28	743.7	29.82	757.4	61.3	16.3	82	S			3		10	SW		0.514	13.04		Astronomical Observatory.
Stuttgart	28.86	733.1	29.78	756.5	60.3	15.7	74	SW			1		9	W		0.161	4.1	Light rain	Prof. Schoder.
Treves, (Trier)	29.25	745.0	29.77	756.2	52.7	11.5	90	NE			1		10			0.267	6.77	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.34	719.9	29.81	757.2	53.2	11.8	88	W	1.3	0.6			10		W	0.016	0.4	Rain & fog	Dr. Von Bebber.
Wustrow, Naval School	29.93	760.2	29.95	760.8	57.9	14.4	82	ENE			3		5k			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.78	756.3	30.15	765.9	77.4	25.2		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee													0			0	0	Blue sky	
Deesa	29.35	745.5	29.82	757.4	90.2	32.3	36	S					0			0	0	Blue sky	
Bombay	29.80	756.8	29.83	757.8	80.9	27.2	83	NE	13	5.8			10	NE	NE	0	0	Overcast	
Poona	29.83	757.3	29.83	757.8	78.6	25.9	76	SSW					10		SSW	0.18	8.3	Overcast	
Lahore	29.02	737.0	29.75	755.7	85.0	29.4	41	Calm	0.5	0.2			1			0	0	Blue sky	
Belgaum	27.32	694.0	29.67	758.7	73.9	23.3	92	W	7	3.1			10		ESE; W	0.82	20.8	Overcast	
Roorkee	28.85	732.7	29.74	755.4	81.8	27.7	52	Calm	2	0.9						0	0		
Agra	29.19	741.3	29.74	755.3	90.7	32.6	31	N								0	0		
Nagpur	28.75	730.3	29.79	756.6	82.1	27.8	74	Calm	2.2	1.0			6			0	0	D. clouds	
Lucknow	29.39	746.4	29.75	755.7	88.2	31.2	49	Calm	1.3	0.6						0	0	Blue sky	
Allahabad	29.43	747.6	29.74	755.4	81.1	27.3	57	Calm	1.2	0.5			0			0	0	Blue sky	
Patna	29.57	751.1	29.75	755.7	81.7	27.6	77	Calm	0.3	0.1			0			0	0	Blue sky	
Hazaribagh	27.77	705.4	29.77	756.1	80.8	27.1	51	NW	3.3	1.5			1			0	0		
Cuttack	29.64	754.0	29.77	756.1	83.0	28.3	75	WSW	1.4	0.6			2			0	0	D. clouds	
Calcutta (Alipore)	29.74	755.4	29.76	756.0	80.1	26.7	91	SW	2.0	0.9			1			0	0	D. clouds	
Goalpara	29.35	745.5	29.74	755.3	82.7	28.2	63	N	1.5	0.7			2			0	0	D. clouds	
Chittagong	29.69	754.1	29.78	756.4	80.9	27.2	78	Calm	3.0	1.3			2			0	0	Misty	
Sibsagar	29.42	747.2	29.75	755.6	81.8	27.7	61	ENE	0.6	0.3			10	W	W	0	0	D. clouds	
Jubbulpore	28.46	723.0	29.82	757.3	84.4	29.1	41	E	0.7	0.3			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.51	749.5	29.92	759.9	62.1	16.7	94	S	0.7	0.3	.....	.....	6	... .	.....	0.756	19.2	.....	Prof. Giovanni Clodig.
Padua	29.78	756 5	29.89	759.3	60.4	15.8	85	S	1.3	0.6	.....	.....	10	W	.....	0.354	9.0	.....	Prof. Dott. Lorenzoni
Vicenza	29.71	754.5	29.90	759.4	59.0	15.0	88	N	0	0	.....	.....	10	.....	.....	0.484	12.3	.....	Cont. Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.36	745.8	29.88	758.9	61.2	16.2	81	SE	.....	.....	2	.....	10	S	.....	0.024	0.6	.....	Prof. Schiaparelli.
Moncalieri	28.98	736.2	29.89	759.1	58.6	14.8	80	SE	1.3	0.6	.....	.....	9	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.97	710.4	29.87	758.8	56.3	13.5	73	N	.....	.....	2	.....	9	.....	.....	0.567	14.4	.....	Prof. D. C. Bruno.
Porto Maurizio	29.67	753.7	29.89	759.3	66.2	19.0	56	WSW	.....	.....	4	.....	7	W	.....	0.748	19.0	.....	Prof. L. Vassallo.
Genoa	29.73	755.2	29.90	759.5	66.6	19.2	66	SW	9.4	4.2	.....	.....	10	SW	.....	0.532	13.5	.....	Prof. G. M. Garibaldi.
Parma	29.59	751.5	29.90	759.4	61.5	16.4	80	NE	.....	.....	2	.....	8	.....	.....	0.465	11.8	.....	Prof. P. Pigorini.
Florence	29.69	754.0	29.94	760.5	67.6	19.8	71	SW	.....	.....	2	.....	10	SW	.....	1.417	36.0	.....	Cav. F. Meucci
Leghorn	29.83	757.6	29.91	759.7	68.2	20.1	68	SW	7.4	3.3	.....	.....	10	.....	.....	0.193	4.9	.....	Prof. P. Monte.
Pesaro	29.86	758.4	29.91	759.6	62.2	16.8	91	NW	6.9	3.1	.....	.....	10	.....	.....	0.433	11.0	.....	Prof. Luigi Guidi.
Urbino	28.41	721.6	29.95	760.8	61.9	16.6	70	SSW	.....	.....	1	.....	10	.....	.....	0.256	6.5	.....	Prof. P. Serpieri
Rome	29.81	757.2	29.98	761.6	72.3	22.4	64	WSW	9.8	4.4	.....	.....	10	.....	.....	1.906	48.4	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.81	757.1	30.04	763.1	77.7	25.4	64	SW	.....	.....	2	.....	7	SW	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.85	758.1	30.10	764.4	72.9	22.7	72	S	18.6	8.3	.....	.....	8	S	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.79	756.6	29.98	761.4	72.9	22.7	68	SE	.....	.....	2	.....	3	SW	.....	0.008	0.2	.....	Prof. A. Pacinotti.
Cosenza	29.16	740.7	30.03	762.8	79.5	26.4	79	SE	1.3	0.6	.....	.....	9	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.72	754.8	29.97	761.1	87.3	30.7	22	SW	8.1	3.6	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.06	763.4	30.13	765.2	73.9	23.3	78	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.93	760.2	30.13	765.3	64.4	18.0	82	NE	5.7	2.5	.....	.....	0	.....	.....	0	0	Clear	
Tokei (Yeddo) Observatory	30.05	763.3	30.12	765.0	62.1	16.7	97	N	4.0	1.8	.....	.....	10s	.....	.....	0.330	8.38	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	57.4	14.2	62	N	.....	.....	3	3c	0	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.14	638.4	30.27	768.8	48.2	9.0	59	E	.....	.....	3	.....	2	.....	.....	0	0	Clear	Prof. L. Perez.
Leon	24.48	622.0	30.12	765.1	51.4	10.8	80	SW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.14	587.9	30.31	769.9	45.3	7.4	90	Calm	0	0	.....	1c	6k	.....	SE	0	0	Cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	48.0	8.9	84	WNW	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	29.98	761.5	29.99	761.8	74.5	23.6	62	N	.....	.....	6	1	5	S	NNE	0.327	8.3	Cloudy	M, M. Cházaro.
San Luis Potosi	24.07	615.5	30.19	766.7	41.0	5.0	18	E	.....	.....	.....	3	0	N	.....	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.08	764.0	30.11	764.7	77.9	25.5	46	NNW	29.3	13.1	.....	2ck	4sk	.....	N	0.039	1.0	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	48.2	9	92	NNE	.....	.....	3	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.30	591.7	30.06	763.5	44.6	7.0	87	E	3.6	1.6	.....	0	1	.....	Calm	0	0	Almost clear	Prof. P. Spina.
Durango	24.15	613.5	30.00	762.0	58.0	14.4	83	ENE	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.36	720.2	29.99	761.6	76.8	24.9	76	E	.....	.....	1	0	2	.....	SE	0.051	1.3	Clear	R. Banda, C. E.
San Juan E. Michapam	29.86	758.3	30.00	762.1	71.6	22	.....	N	.....	.....	.....	.....	10n	.....	N	1.185	30.1	Covered	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.79	756.6	29.79	756.6	57.6	14.2	.....	E	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Groningen	29.84	758.0	29.90	759.4	54.3	12.4	.....	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.86	758.4	29.86	758.4	54.3	12.4	.....	ENE	.....	.....	4	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.78	756.3	29.78	756.3	54.3	12.4	82	E	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.78	756.5	29.83	757.7	57.0	13.9	76	E	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	H. v d Bru...
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	30.01	762.2	30.07	763.6	54.7	12.6	63	SSE	8.9	4.0	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.97	761.1	30.00	762.1	51.4	10.8	89	SW	18	8	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.97	761.1	30.11	764.9	51.1	10.6	85	SW	2	1	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.72	754.8	29.76	755.9	45.3	7.4	86	SSW	13	6	.....	.....	10	.....	.....	1.087	27.6	Light rain...	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 7h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.69	754.1	29.88	759.0	60.4	15.8	79	WNW	13.0	5.8	.....	.....	4	.....	.....	0.197	5.0	.....	Dr. J. A. Sampaio.
Campo Major	28.91	734.3	29.93	760.2	64.4	18.0	74	SSE	3.1	1.4	.....	.....	10	SSW	.....	0.157	4.0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.73	755.2	29.82	757.4	71.8	22.1	67	SW	9.8	4.4	.....	.....	7	.....	.....	0.047	1.2	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.51	749.5	29.87	758.6	66.7	19.3	68	SSE	15.0	6.7	.....	.....	7	SW	.....	0.047	1.2	.....	The Staff.
Ponta Delgada, (Azores)	29.75	755.6	29.82	757.4	63.0	17.2	57	NNW	19.9	8.9	.....	.....	3	ESE	.....	0.244	6.2	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54′, W. 25° 4′	.....	.....	D. clouds....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.47	748.5	29.89	759.2	54.7	12.6	88	ESE	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.66	753.4	30.08	764.1	53.1	11.7	55	ESE	7	3	.....	.....	3	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.95	760.8	30.20	767.0	53.2	11.8	74	SSE	2	1	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	30.16	766.0	30.17	766.4	55.8	13.2	74	NNW	4	2	.....	.....	3ck	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.43	747.5	30.07	763.7	54.3	12.4	55	ESE	7	3	.....	.....	9c;ck;	s;ks]	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.10	764.4	30.17	766.2	55.5	18.6	68	SSW	4	2	.....	.....	8s	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.23	767.7	30.24	768.2	66.2	19.2	73	Calm	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.76	755 8	30.32	770.0	53.1	11.7	67	S	4	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.96	761.0	30.16	766 1	65.5	18.6	54	SE	9	4	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.89	759.3	29.91	759.8	44.1	6.7	91	WSW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselkwerstow.
Tiflis	28.97	735.9	30.39	771.9	62.4	16.9	59	Calm	0	0	.....	.....	9ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.50	774.8	30.42	772.7	57.7	14.3	49	ESE	7	3	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.72	754.9	30.19	766.8	57.7	14.3	52	W	4	2	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.89	759.3	30.17	766.2	55.8	13.2	59	WSW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	28.87	733.2	29.84	757.8	42.1	5.6	82	W	31	14	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.26	768.7	30.50	774.8	51.4	10.8	33	WNW	2	1	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	29 93	734.9	30.73	780.6	39.9	4.4	84	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.60	751.7	30.15	765.8	24.3	— 4.3	70	SW	0	0	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.54	750.4	29.85	758.1	26.8	— 2.9	89	WNW	20	9	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Peking, (China)	30.03	762.7	30.17	766.3	53.6	12.0	96	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.85	758.3	29.94	760.5	35.4	1.9	93	Calm	0	0	.....	.....	4k	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tulis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 46° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.78	756.5	29.89	759.1	70.7	21.5	59	SW	2.4	1.06	.....	.....	0	.....	.....	0	0	Clear.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.75	755 6	29.80	757.0	71.8	22.1	59	S	3.6	1.59	.....	.....	10	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.97	684.9	.....	.....	59.4	15.2	89	SW	8.8	3.93	.....	.....	9	.....	.....	0.039	1.0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.74	704.6	29.94	760 5	62.6	17.0	65	SW	26.1	11.67	.....	0	8	.....	.....	0.193	4.9	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.80	757.0	29.95	760.7	76 8	24.9	63	SW	2.3	1.03	.....	.....	2	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.86	733.1	29.74	755.5	61.7	16.5	84	SW	9.3	4.17	.....	2	6	.....	.....	0.850	21.6	Almost cov.	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.81	757.2	29.88	758.8	75.3	24.1	89	ENE	1.1	0.5	.....	.....	10n	.....	ENE	0.323	8.2	Raining.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.89	759.2	29.99	761.7	67.6	19.8	85	SSE	19.0	8.5	.....	0	10	.....	S	0.060	1.5	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.84	757.8	29.93	760.1	81.3	27.4	86	SE	2.6	1.16	.....	8k	0	SE	.....	0.020	0.50	Clear.....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 861 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.91	759.6	29.95	760.6	47.8	8.8	.....	Calm	.....	.....	0	.....	5	.....	.....	0	0	.....	
Umea	30.01	762.3	30.07	763.6	51.8	11.0	77	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Hernosand	30.00	762.1	30.06	763.4	50.7	10.4	70	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	
Stockholm	29.94	760.4	30.11	764.9	54.0	12.2	89	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	
Wisby	30.04	763.0	30.10	764.5	57.9	14.4	65	ESE	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.05	763.3	30.13	765.2	51.4	10.8	96	SSW	.....	.....	.....	.....	10	.....	WSW	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

neva	28.40	723.6	29.01	759.6	50.8	13.8	65	SSW	.....	.....	5	.....	10	.....	.....	0.217	5.5	Covered.....	The Observatory.
Zurich	28.26	717.7	29.89	759.3	54.3	12.4	94	SW	.....	.....	.....	.....	10	.....	.....	0.244	6.2	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.5 mm.; Thermometer, +1.5 cent.; Relative Humidity, —7 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.17	766.2	68.7	20.4	57	ESE	4	2.0	.....	.....	8	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.19	766.8	73.9	23.3	.....	W	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.92	760.0	30.03	762.8	81.5	27.5	63	N	.....	.....	3	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.61	752.1	29.68	753.9	62.1	16.7	93	Calm	0	0	.....	.....	10n	.....	.....	0.83	21.1	Overcast....	Hon. J. Ferguson.
Brockville, Ontario	29.80	744.2	29.60	751.8	38	3.3	.....	N	8	3.6	.....	.....	10n	.....	N	0.75	19.1	Light rain...	W. R. Bigg.
*Chatham, N B	29.62	752.3	29.68	753.9	64	17.8	97	E	1	0.4	.....	.....	10n	.....	E	0.23	5.8	Light rain...	G. A. Blair.
Charlottetown, P. E. Island.	29.75	755.6	29.79	756.7	62	16.7	97	SE	12	5.4	.....	.....	10s	.....	Calm	0.060	1.52	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.30	744.2	29.49	749.0	41.2	5.1	93	NW	.....	.....	5	.....	10n	.....	.....	1.416	35.96	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	29.52	749.8	29.78	756.4	55	12.8	100	E	.....	.....	1	.....	.....	.....	.....	0.80	20.3	Foggy	H. A. Johnson.
Esquimault, B. C	29.19	741.4	29.28	743.7	49.3	9.6	100	SE	.....	.....	.....	.....	10s	.....	.....	0.47	11.9	Cloudy.....	W. H. Bevis.
*Father Point, Quebec	29.68	753.9	29.70	754.4	44	6.7	92	NE	3	1.3	.....	.....	Fog	.....	Calm	0.48	12.2	Light rain...	J. McWilliams.
Fredericton, N. B	29.55	750.6	29.61	752.1	64.0	17.8	94	SE	10	4.5	.....	.....	10n	.....	.....	0.545	13.85	Light rain...	Prof. Harrison.
*Fort Garry Manitoba	28.79	731.3	29.62	752.3	37	2.8	95	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear.	James Stewart.
Granton, Ontario	28.92	734.6	30.06	763.5	30	-2.2	.....	N	.....	.....	2	0	0	.....	.....	0.03	0.8	Clear.....	James Grant.
*Halifax, N. S	29.62	752.3	29.75	755.6	61	16.1	98	SE	11	4.9	.....	.....	Fog	.....	.....	0.282	7.16	Light rain...	F. Allison, M. A.
Hamilton, Ontario	29.60	751.8	29.98	761.5	40.7	4.8	82	N	.....	.....	2	4k	0	.....	.....	0	0	Fair	Geo. Dickson, M. A.
Heart's Content, N. F	30.13	765.3	30.15	765.8	54	12.2	93	Calm	.....	.....	0	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.36	745.7	29.69	754.1	41	5.0	79	NW	22	9.8	.....	.....	10n	.....	NW	0.72	18.3	Light rain...	S. Woods, M. A.
Little Glace Bay, N. S	29.92	760.0	29.96	761.0	62.7	17.1	90	S	10	4.5	.....	.....	10n	.....	.....	0.02	0.5	Threatening	C. H. Rigby.
*Montreal, Quebec	29.32	744.7	29.52	749.8	43	6.1	94	W	23	10.3	.....	.....	10n	.....	NW	1.25	31.7	Heavy rain.	O. H. McLeod, C. E.
*Parry Sound, Ontario	29.30	744.2	30.02	762.5	35	1.7	80	N	14	6.3	.....	5k	5ks	N	N	0.22	5.6	Cloudy.....	Rev. R. Mosley.
Peterboro', Ontario	29.07	738.4	29.83	757.7	37.7	3.2	71	NW	.....	.....	3	0	5ks	.....	.....	0	0	Fine...	J. F. Jeffers, B. A.
Port Dover, Ontario	29.28	743.7	29.98	761.5	42	5.6	88	NW	12	5.4	.....	8k	0	NW	.....	0	0	Fair.....	H. Morgan.
Port Hastings, N. S	29.84	757.9	29.89	759.2	60.5	15.8	.....	S	10	4.5	.....	.....	.....	.....	S	0.35	8.9	Raining... ...	Peter Grant.
Port Stanley, Ontario	29.38	745.0	29.99	761.7	39	3.9	83	W	5	2.2	.....	2k	0	NW	S	Inap.	Inap.	Clear.....	M. Payne.
*Quebec, Quebec	29.24	742.7	29.55	750.6	49	9.4	78	NE	.....	.....	7	2k	2s	NE	NE	0.40	10.2	Clearing.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.46	748.3	29.93	760.2	38	3.3	72	N	8	3.6	.....	.....	8s	.....	N	Inap.	Inap.	Fair	W. H. McIntyre.
St. Andrews, N. B	29.59	750.0	29.58	751.3	58	14.4	99	SE	.....	.....	.....	.....	10n	.....	.....	0.17	4.3	Light rain...	Dr. Gove.
St. John, N. B	29.44	747.8	29.60	751.8	64	17.8	94	SE	.....	.....	.....	.....	10n	.....	.....	0.51	13.0	Light rain...	G. Murdock, C. E.
*Saugeen, Ontario	29.31	744.5	30.04	763.0	39	3.9	67	N	24	10.7	.....	.....	10n	.....	N	0.06	1.5	Light rain...	K. Stewart.
Stayner, Ontario	29.19	741.4	29.98	761.5	38	3.3	77	N	15	6.7	.....	.....	10n	.....	N	0	0	Threatening	R. J. Cole.
Stratford, Ontario	28.70	729.0	30.02	762.5	37.0	2.8	85	NW	11.0	4.9	.....	.....	10	.....	.....	0	0	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	29.94	760.5	29.97	761.2	62	16.7	94	S	8	3.6	.....	.....	10n	.....	S	Inap.	Inap.	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.54	750 3	29.93	760.2	39	3.9	88	N	18	8.0	.....	.....	8ks	.....	N	0.02	0.5	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	30.09	764.3	30.20	768 6	57	13.9	94	S	.....	.....	.....	4k	4s	.....	.....	Inap.	Inap.	Fair...	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrum'tal error and temperature. Inches.	BAROMETER. Corrected for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.26	743.2	29.48	748.8	43	6.1	83	W	16	7.2			10s		W	1.89	48.0	Cloudy.	
Alpena, Michigan	29.44	747.8	30.11	764.8	35	1.7	90	NW	7	3.1		0	Fog			0.01	0.3	Clear.	
Atlanta, Georgia	28.98	736.1	30.16	766.1	38	3.3	71	NW	10	4.5		0	Sm'e		NW	0	0	Clear	
Atlantic City, New Jersey	29.74	755.4	29.75	755.6	47	8.3	69	W	16	7.2		8k	0	W		0.71	18.0	Fair	
Augusta, Georgia	29.97	761.2	30.16	766.1	44	6.7	84	Calm	0	0		0	Haze			0	0	Hazy.	
Baltimore, Maryland	29.77	756.1	29.82	757.4	48	8.9	70	W	10	4.5		0	Sm'e		Calm	0.54	13.7	Clear.	
Barnegat, New Jersey	29.69	754.1	29.71	754.6	48	8.9	70	W	20	8.9		2k	0	NW		0.50	12.7	Fair	
Bismarck, Dakota	27.95	709 9	29.80	756.9	43	6.1	75	Calm	0	0		5cs	Sm'e		NW	0	0	Smoky.	
Boerne, Texas	28.73	729.7			50	10.0	52	N	3	1.3		0	0			0	0	Clear.	
Boise City, Idaho	27.00	685.8	29.96	761.0	48	8.9	56	S	3	1.3			10s		W	0	0	Cloudy.	
Boston, Massachusetts	29.37	746.0	29.52	749.8	56	13.3	69	SW	17	7.6		5cs;k	6ks;s	Calm;SW	SW	0.27	6.9	Cloudy	
Brackettville, Texas	29.04	737.6	30.07	763.8	48	8.9	43	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.74	730.0	29.75	755.6	35	1.7	70	SE	12	5.4		1cs	0	Calm		0	0	Clear	
Brownsville, Texas	30.13	765.3	30.20	767.1	56	13.3	81	N	4	1.8		0	2s		Calm	0	0	Clear	
Buffalo, New York	29.16	740.7	29.87	758.7	41	5.0	82	NW	12	5.4			10s		N	0.13	3.3	Cloudy	
Burkes, Arizona					54	12.2	15	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.25	742.9	29.51	749.5	45	7 2	92	N	12	5.4			10n		N	1.98	50.3	Light rain	
Cairo, Illinois	29.83	757.7	30.24	768.1	40	4.4	91	Calm	0	0			Fog		Calm	0	0	Foggy	
Camp Apacha, Arizona	24.62	625.3	29.62	752.3	38	3.3	46	E			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.23	640.8	30.03	762.7	63	17.2	24	N			1	1c	0	Calm		0	0	Clear	
Camp Verde, Arizona	26.82	681.2	30.39	769.6	45	7.2	46	N			1	0	0			0	0	Clear	
Campo, California	27.33	694.2	29.90	759.4	35	1.7	69	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.97	761.2	29.97	761.2	52	11.1	73	N	12	5.4		2k	0	NW		0.25	6.3	Fair	
Cape Henry, Virginia	29.88	758.9	29.91	759.7	50	10.0	58	W	10	4.5		5ck	2s	NW	Calm	0.92	23.4	Cloudy	
Cape Lookout, N. Carolina	29.98	761.5	29.99	761.7	48	8.9	70	NW	28	12.5		0	0			0.25	6.3	Clear	
Cape May, New Jersey	29.77	756.1	29.80	756.9	48	8.9	85	W	30	13.4		0	0			0.36	9.1	Clear	
Castroville, Texas	29.41	747.0	30.14	765.5	46	7.8	62	NW	4	1.8		0	0			0	0	Clear	
Charleston, South Carolina	30.06	763.5	30.12	765.0	48	8.9	63	N	10	4.5		0	0			0	0	Clear	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	56	13.3	19	W	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.48	748.8	30.20	767.1	34	1.1	79	NW	5	2.2		0	Fog		Calm	0	0	Clear	
Cincinnati, Ohio	29.54	750.3	30.21	767.3	41	5.0	65	NW	5	2.2		0	0			Inap.	Inap.	Clear	
Cleveland, Ohio	29.27	743.4	29.99	761.7	48	8.9	63	NW	16	7.2		0	5ks		NW	0.37	9.4	Fair	
Coleman City, Texas	28.35	720.1	30.06	763.5	45	7.2	53	S	5	2.2		2c	0	Calm		0	0	Fair	
Columbus, Ohio	29.26	743.2	30.13	765.3	36	2.2	80	NW	9	4.0		5ck	Fog	NW	Calm	Inap.	Inap.	Fair	
Conoco, Texas	28.22	716.8	29.94	760.5	45	7.2	51	S	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.74	755.4	30.23	767.8	47	8.3	77	NE	1	0.4		0	0			0	0	Clear	
Davenport, Iowa	29.57	751.1	30.23	767.8	38	3.3	72	SE	1	0.4		1c	0	Calm		0	0	Clear	
Decatur, Texas	28.98	736.1	30.16	766.1	52	11.1	47	S	12	5.4		0	0			0	0	Clear	
Denison, Texas	29.39	746.5	30.20	767.1	50	10.0	58	SW	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.78	629.4	30.00	762.0	47	8.3	21	SE	10	4.5		0	0			0	0	Clear.	
Des Moines, Iowa	29.20	741.7	30.11	764.8	37	2.8	81	S	5	2.2		2c	Haze	NW	Calm	0	0	Clear	
Detroit, Michigan	29.39	746.5	30.08	764.0	37	2.8	81	NW	9	4.0		0	0			0.01	0.3	Clear	
Dodge City, Kansas	27.34	694.4	29.63	752.6	46	7.8	40	S	12	5.4		0	0			0	0	Clear	
Dubuque, Iowa	29.47	748 5	30.19	766.8	38	3.3	72	SE	1	0.4		10cs	0	SW		0	0	Cloudy	
Duluth, Minnesota	29.30	744.2	30.00	762.0	37	2.8	71	Calm	0	0		0	5s		Calm	0	0	Fair	
Eagle Pass, Texas	29.39	746.5	30.16	766.1	48	8.9	56	S	1	0.4		0	0			0	0	Clear	
Eastport, Maine	29.52	749.8	29.58	751.3	60	15.6	97	S	14	6.3			10s;fg		S	0.33	8.4	Cloudy	
Edinburg, Texas																			
El Paso, Texas					61	16.1	41	Calm	0	0		0	0			0	0	Clear	
Erie, Pennsylvania	29.20	741.7	29.91	759.7	46	7.8	69	NW	16	7.2		5k	2s	NW	NW	0.85	21.6	Cloudy	
Escanaba, Michigan	29.52	749.8	30.20	767.1	29	— 1.7	78	NW	2	0.9		0	0			Inap.	Inap.	Clear	
Florence, Arizona	28.40	721.3	30.00	762.0	62	16.7	36	S			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.61	650.5	29.67	753.6	38	3.3	46	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.30	642.6	30.26	768.6	56	13.3	14	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.63	752.6	30.18	766.6	46	7.8	69	E	3	1.3		5c	0	NW		0	0	Fair	
Fort Griffin, Texas	28.86	733.0	30.17	766.3	44	6.7	60	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.91	708.9	29.84	757.9	55	12.8	33	S	2	0.9		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.90	734.0	30 04	763.0	44	6.7	68	S	4	1.8		0	0			0	0	Clear	
Fredericksburg, Texas	28.44	722.4	30.00	762.0	61	16.1	40	Calm	0	0		0	0			0	0	Clear	
Galveston, Texas	30.17	766.3	30.21	767.3	64	17.8	43	NE	16	6.7		0	0			0	0	Clear	
Graham, Texas	29.06	738.1	30.15	765.8	43	6.1	67	Calm	0	0		0	0			0	0	Clear	
Grand Haven, Michigan	29.51	749.5	30.18	766 6	41	5.0	82	NE	1	0.4		5k	0	NE		0	0	Fair	
Indianapolis, Indiana	29.40	746.7	30.21	767.3	37	2.8	71	NW	1	0.4		0	0			0	0	Clear	
Indianola, Texas	30.19	766.8	30.22	767.6	64	17.8	58	NE	13	5.8		0	0			0	0	Clear	
Jacksboro, Texas	28.98	736.1	30.13	765.3	49	9.4	51	Calm	0	0		0	0			0	0	Clear	
Jacksonville, Florida	30.07	763.8	30.09	764.3	49	9.4	57	NW	8	3.6		0	0			0	0	Clear	
Keokuk, Iowa	29.46	748.3	30.10	764.5	38	3.3	91	W	1	0.4		1c	0	Calm		0	0	Clear	
Key West, Florida	29.87	758.7	29.99	759.4	77	25.0	82	NE	12	5.4		10cs;k	0	Calm;NE		0	0	Cloudy	
Kittyhawk, North Carolina	29.92	760.0	29.95	760.7	47	8.3	77	NW	15	6.7		10cs	0	W		0.55	14.0	Cloudy	
Knoxville, Tennessee	29.20	741.7	30.24	768.1	41	5.0	65	NW	2	0.9		1k	0	N		0	0	Clear	
La Crosse, Wisconsin	29.37	746.0	30.13	765.3	35	1.7	90	S	10	4.5		2c	0	N		0	0	Clear	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	40	4.4	56	N	2	0.9		0	0			0	0	Clear	
Laredo, Texas	29.74	755.4	30.09	764.3	44	6.7	60	Calm	0	0		0	0			0	0	Clear	
Lead City, Dakota	24.72	627.9	29.99	761.7	43	6.1	75	S	2	0.9		0	Haze		Calm	0	0	Clear	
Leavenworth, Kansas	29.24	742.7	30.10	764 5	43	6.1	51	S	3	1.3		0	0			0	0	Clear	
Los Angeles, California	29.60	751.8	29.94	760.5	47	8.3	73	N	1	0.4		0	0			0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.23	767.8	40	4.4	65	W	3	1.3		0	Sm'e		Calm	Inap.	Inap.	Dense smoke	
Lynchburg, Virginia	29.30	744.2	29.98	761.5	48	8.9	64	SW	4	1.8		0	0			0.01	0.3	Clear	
Madison, Wisconsin	29.18	741.2	30.20	767.1	37	2.8	81	SE	4	1.8		0	0			0	0	Clear	
Marquette, Michigan	29.44	747.8	30.16	766.1	36	2.2	71	SW	8	3.6		5c	0	SW		0.80	20.3	Fair	
Mason, Texas	28.50	723.9	30.32	770.1	41	5.0	82	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.15	748.0	30.21	767.3	33	0.6	89	NW	7	3.1		0	1s		Calm	0	0	Clear	
Mobile, Alabama	30.20	767.1	30.24	768.1	47.5	8.6	77	N	13	5.8		0	0			0	0	Clear	
Montgomery, Alabama	30.01	762.2	30 26	768.6	41	5.0	83	Calm	0	0		0	0			0	0	Clear	
Morgantown, West Virginia	28.90	734.0	29.96	761.0	44	6.7	84	W	14	6.3			10s		NW	0.23	5.8	Cloudy	
Mt. Washington, N. H.	23.33	592.6	29.69	754.1	42	5.6	100	SE	62	27.7			10n		SE	1.16	29.5	Light rain	
Nashville, Tennessee	29.74	755.4	30.30	769.6	37	2.8	90	W	2	0.9		0	Sm'e		Calm	0	0	Smoky	
New Haven, Connecticut	29.45	748.0	29.56	750.8	53	11.7	73	SW	10	4.5		5k	5s	W	SW	0.43	10.9	Clearing	
New London, Connecticut	29.52	749.8	29.57	751.1	50	10.0	86	S	20	8.9			10s;ks		SW;S	0.04	0.8	Threatening	
New Orleans, Louisiana	30.15	765 8	30.21	767.3	54	12.2	61	NW	12	5.4		0	0			0	0	Clear	
Newport, Rhode Island	29.52	749.8	29.57	751.1	54	12.2	74	SW	16	7.2			10ks		SW	0	0	Threatening	
New York, New York	29.45	748.0	29.63	752.6	48	8.9	70	W	24	10.7			10s		W	0.92	23.4	Cloudy	
Norfolk, Virginia	29.90	759.4	29.96	761.0	46	7.8	77	W	6	2.7		2c	2s	NW	W	0.22	5.6	Fair	
North Platte, Nebraska	26.97	685.0	29.57	751.1	36	2.2	61	W	6	2.7		0	0			0	0	Clear	
Olympia, Washington Ter.	29.39	746.5	29.43	747 5	51	10.6	93	S	13	5.8			10n		Calm	0.12	3.0	Light rain	
Omaha, Nebraska	28.84	732 5	29.92	760.0	46	7.8	47	S	13	5.8		2c	0	W		0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	29.40	746.7	29.71	754.6	44	6.7	92	N	28	12.5	.....	.....	10n	.....	.....	1.29	32.8	Light rain...	
Pembina, Dakota	28.78	731.0	29.61	752.1	39	3.9	73	S	12	5.4	.....	0	1s	.....	Calm	0	0	Clear.....	
Philadelphia, Pa	29.70	754.4	29.75	755.6	48	8.9	63	W	9	4.0	.....	2k	5ks	W	W	0.28.	7.1	Cloudy.....	
Phœnix, Arizona	28.75	730.2	.....	.....	64	17.8	34	SE	.....	.....	2	0	0	.....	.....	0	0	Clear.....	
Pike's Peak, Colorado	17.92	454.7	30.13	765.3	25	— 3.9	14	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear.....	
Ploche, Nevada	24.09	611.9	29.86	758.4	43.5	6.4	43	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Pittsburg, Pennsylvania	29.12	739.6	29.94	760.5	44	6.7	92	NW	8	3.6	.....	.....	10s	.....	NW	0.07	1.8	Threatening	
Port Huron, Michigan	29.36	745.7	30.03	762.7	39	3.9	82	NW	14	6.3	.....	5k	0	W	.....	0.16	4.1	Fair	
Portland, Maine	29.43	747.5	29.48	748.8	57	13.9	100	SE	16	7.2	.....	.....	10n	.....	Calm	0.54	13.7	Light rain...	
Portland, Oregon	29.01	762.1	29.71	754.6	55	12.8	87	S	13	5.8	.....	.....	10n	.....	Calm	0.12	3.0	Light rain...	
Prescott, Arizona	24.81	630.2	30.17	766.3	42	5.6	34	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Pilot Point, Texas	29.41	747.0	30.26	768.6	49	9.4	62	S	4	1.8	.....	Sm'e	Sm'e	.....	.....	0	0	Smoky.....	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	67	19.4	50	NE	18	8.0	.....	5cs	5s	SW	NE	0	0	Cloudy.....	
Red Bluff, California	29.58	751.3	29.93	760.2	53	11.7	73	NW	8	3.6	.....	1c	0	Calm	.....	0	0	Clear.....	
Rio Grande City, Texas	30.03	762.7	30.26	768.6	50	10.0	86	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Rochester, New York	29.15	740.4	29.76	755.9	44	6.7	84	NW	15	6.7	.....	.....	10n	.....	NW	0.39	9.9	Light rain .	
Roseburg, Oregon	29.30	744.2	29.86	758.4	51.5	10.8	96	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy.....	
Sacramento, California	29.84	757.9	29.92	760.0	52	11.1	79	S	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
St. Louis, Missouri	29.07	738 6	30.27	768.8	39	3.9	82	N	2	0.9	.....	.....	Fog	.....	.....	0	0	Foggy.....	
St. Marks, Florida	30.12	765.0	30.14	765.5	45	7.2	91	N	20	8.9	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul, Minnesota	29.10	739.1	29.94	760.5	36	2.2	70	SE	9	4.0	.....	10cs	0	Calm	.....	0	0	Cloudy.....	
Salt Lake City, Utah	25.04	651.2	29.97	761.2	44.0	6.7	68	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.50	749.3	30.10	764.5	48	8.9	78	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
San Diego, California	29.88	758.9	29.96	761.0	56	13.3	100	N	3	1.3	.....	.....	Fog	.....	.....	0	0	Foggy.....	
Sandusky, Ohio	29.41	747.0	30.09	764.3	44	6.7	84	N	26	11.6	.....	.....	10ks	.....	N	0.22	5.6	Cloudy.....	
Sandy Hook, New Jersey	29.02	752.3	29.65	753.1	48	8.9	78	W	30	13.4	.....	.....	10ks	.....	W	0.95	24.1	Cloudy.....	
San Francisco, California	29.90	759.4	29.96	761.0	55	12.8	93	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	37	2.8	45	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Savannah, Georgia	30.03	762.7	30.18	766.3	45	7.2	76	N	9	4.0	.....	0	0	.....	.....	0	0	Clear.....	
Shreveport, Louisiana	30.03	762.7	30.26	768.6	47	8.3	92	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Silver City, New Mexico	24.37	619.0	.....	.....	47	8.3	34	S	4	1.8	.....	5k	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.02	762.5	30.06	763.5	47	8.3	62	NW	8	3.6	.....	0	0	.....	.....	0.02	0.5	Clear.....	
Springfield, Massachusetts	29.40	746.7	29.52	749.8	53	11.7	73	SW	8	3.6	.....	.....	10s	.....	SW	0.22	5.6	Cloudy.....	
Stockton, Texas	27.06	687.3	30.06	763.5	42	5.6	68	S	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	29.46	748.3	29.51	749.5	55	12.8	87	SW	25	11.2	.....	0	8s	.....	SW	0.21	5.3	Fair	
Toledo, Ohio	29.40	746.7	30.09	764.3	39	3.9	73	W	7	3.1	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	
Tucson, Arizona	.....	.....	.....	.....	68	20.0	38	S	3	1.3	.....	5ck	0	S	.....	0	0	Fair	
Tybee Island, Georgia	30.08	764.0	30.11	764.8	48	8.9	70	N	16	7.2	.....	0	0	.....	.....	0	0	Clear.....	
Umatilla, Oregon	29.30	744.2	.....	.....	53.5	11.9	85	SW	2	0.9	.....	.....	10ks	.....	W	0	0	Cloudy.....	
Unalashka, Aleutian Islands	.....	.....	.....	.....	33	0.6	100	W	.....	.....	2	.....	10s	.....	NW	0.10	2.5	Cloudy.....	
Uvalde, Texas	29.32	744.7	30.16	766.1	45	7.2	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Vicksburg, Mississippi	30.04	763.0	30.31	769.9	45	7.2	76	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Virginia City, Montana	24.10	612.1	29.58	751.3	40	4.4	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Visalia, California	29.02	752.3	29.99	761.7	48	8.9	92	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Washington, D. C	29.76	755.9	29.88	758.9	47	8.3	70	NW	12	5.4	.....	0	0	.....	.....	0.59	15.0	Clear.....	
Wickenburg, Arizona	.....	.....	.....	.....	46	7.8	54	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	29.96	761.0	30.04	763.0	46	7.8	69	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
Winnemucca, Nevada	25.61	650.5	29.97	761.2	42	5.6	60	SW	10	4.5	.....	8c	0	Calm	.....	0	0	Fair.....	
Wood's Holl, Mass	29.54	750.3	29.59	751.6	55	12.8	74	SW	20	8.9	.....	.....	10ks	.....	SW	0.03	0.8	Threatening	
Yankton, Dakota	28.55	725.2	29.53	757.7	44	6.7	52	S	7	3.1	.....	1c	0	NW	.....	0	0	Clear.....	
Yuma, Arizona	29.66	753.4	29.83	757.7	56	13.3	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.76	755.9	29.81	757.2	32.0	0.0	94	W	5	2.2	.....	3cs	4s	W	W	Inap.	Inap.	Cloudy.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.86	758.4	29.88	758.9	77	25.0	86	Calm	0	0	.....	.....	10n	.....	NE	0.33	8.4	Light rain...	Chas. Hasselbrink.
Santiago de Cuba, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	86	29.4	75	NE	3	1.3	.....	2c	2ks	E	.....	1.22	31.0	Clear.....	G. O. Gellich.
Kingston, Jamaica, W. I	30.01	762.2	30.02	762.5	80	26.7	91	SE	6	2.7	.....	8c	5ks	Calm	SE	0.06	1.5	.....	James Gall.
Nayassa, W. I	29.79	756.7	29.87	758.7	83	28.3	.....	SE	20	8.9	.....	.....	.....	.....	.....	0.18	4.6	Partly cld'y	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.98	761.5	29.98	761.5	83	28.3	79	NE	.....	.....	2	3c	5k	E	.....	0.140	3.56	Fair	O. J. Hering
Medellin, Colombia, S. A	25.24	641.1	.....	.....	65.5	18.6	82	Calm	0	0	.....	.....	10s	.....	.....	1.28	32.5	.....	Thomas Herran.
Portland, Jamaica, W. I	29.66	753.4	29.97	761.2	78	25.6	86	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	Fine.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,102 ft., or 1,673.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,014 (?) ft., or 402.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,500 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,286 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.25	768.3	50	10.0	50	10.0	58	NE	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	29.49‡	749.0‡	.....	.....	56	13.3	87	S	7	3.1	.....	.....	10	.....	.....	0.02	0.5	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.08*	764.0*	66	18.9	62.5	16.9	94	NNE	.....	.....	2	.....	10ks	....	NE	0.51	13.0	.....	.....	Gloomy	
Adams. Valparaiso, Chili.....	30.07	763.8	64	17.8	59	15.0	82	Var.	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Fair.....	
Alaska, Callao, Peru.....	30.12	765.0	68	20.0	64	17.8	83	Calm	.....	.....	0	.....	10	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance, Smyrna, Turkey.....	30.14‡	765.5‡	.....	.....	73	22.8	63	W	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Ashuelot. Nagasaki, Japan.....	30.18	766.6	68	20.0	66	18.9	84	NE	.....	.....	2	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
Canonicus, New Orleans, La.....	30.08	764.0	44	6.7	54	12.2	93	N	.....	.....	6	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	29.63‡	752.6‡	.....	.....	48	8.9	78	W	15	6.7	.....	.....	10	.....	NW	0.84	21.3	.....	.....	Squally.....	
Constitution, Havre, France.....	.....	.....	.....	.....	59	15.0	56	W	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Rainy.....	
Despatch, Constantinople, Turkey	30.18‡	766.6‡	.....	.....	72	22.2	80	NE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, About S. 34° 30′, E. 18° ..	30.15	765.8	62	16.7	61	16.1	94	WSW	.....	.....	2	.....	8	.....	S	.....	.....	Smooth	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.02	762.5	65	18.3	46	7.8	84	NW	8.5	3.8	.....	.....	2	.....	NW	0.4	10.	.....	.....	Fair.....	
Gettysburg Port Said, Egypt.....	29.98‡	761.5‡	.....	.....	83	28.3	96	N	.....	.....	3	.....	1	.....	.....	0	0	Smooth	NW	D. clouds....	
Guard. N. 7° 23′, W. 40° 54′.....	29.95	760.7	85	29.4	85	29.4	68	S	.....	.....	1	.....	8	.....	S	.....	.....	Smooth	.....	Cloudy.....	
Hartford, Santos, Brazil.....	30.05	763.3	75	23.9	71	21.7	95	Calm	0	0	.....	.....	10	.....	.....	0.09	2.3	Smooth	.....	Cloudy.....	
Marion, Trieste, Austria.....	29.89	759.2	66	18.9	66	18.9	84	Calm	.....	.....	0	.....	10	.....	Calm	Heavy	Heavy	.....	.....	Cloudy.....	
Michigan, Buffalo, N. Y.....	29.93†	760.2†	.....	.....	44	6.7	84	NNW	.....	.....	7	.....	10	.....	NW	.....	.....	Mod'ate	SW	Cloudy.....	
Monocacy. Yokohama, Japan	30.10‡	764.5‡	.....	.....	64	17.8	94	NNW	.....	.....	2	.....	10	.....	NNW	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.....	30.21	767.3	51	10.6	49	9.4	63	N	18	8.0	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	64	17.8	83	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty..... .	
Palos, Tientsin, China.....	30.20	767.1	60	15.6	59	15.0	88	E	.....	.....	1	.....	8	.....	E	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	46	7.8	92	WNW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Off St. Thomas, W. I....	30.11	764.8	84	28.9	84	28.9	71	E	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Powhatan, Boston, Mass.....	29.63‡	750.0‡	.....	.....	56	13.3	75	SW	24.0	10.7	.....	.....	2	.....	SW	0.09	2.3	.....	.....	Fair	
Quinnebaug, Lewes, Del.....	29.84‡	757.8‡	.....	.....	49	9.4	78	WSW	.....	.....	5	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger. Hong-Kong, China	30.04	763.0	79	26.1	77	25.0	95	E	.....	.....	6	.....	10	.....	W	.....	.....	.....	.....	Rainy.....	
Rio Bravo, Brownsville, Texas.....	30.10	764.5	57	13.9	57	13.9	94	NW	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Santee, Annapolis, Md...	29.81‡	757.2‡	.....	.....	46	7.8	77	WNW	.....	.....	4	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga, Philadelphia, Pa.....	29.71	754.6	.....	.....	48	8.9	??	W	.....	.....	2	.....	4	.....	.....	0	0	.....	.....	Misty.....	
St. Louis, League Island, Pa	29.69	754.1	59	15.0	48	8.9	70	WNW	20	8.9	.....	.....	10	.....	NW	0.42	10.7	.....	.....	Cloudy.....	
Supply, Havre, France.....	29.78	756.4	63	17.2	61	16.1	94	WNW	.....	.....	0–1	.....	10	.....	.....	.....	.....	.....	.....	Drizzling.....	
Swatara, Boston, Mass.....	29.51‡	749.5‡	.....	.....	57	13.9	75	WSW	.....	.....	4	.....	8	.....	WSW	.....	.....	... ...	.....	Squally.....	
Trenton, Villafranca, France.....	29.87‡	758.7‡	.....	.....	66	18.9	89	SW	.....	.....	2–3	.....	8	.....	S;W	0.5	13.	.....	.....	Cloudy	
Vandalia, Port Mahon, Minorca Id., Baleric Ids.	29.96‡	761.0‡	.....	.....	75	23.9	64	SW	.....	.....	3	.....	5	.....	SW	.....	.....	.....	.....	Fair	
Wabash, Boston, Mass.....	.....	.....	.....	.....	57	13.9	59	SW	9	4.0	.....	.....	2	.....	.....	0.2	5.	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 34° 27′, E. 147° 04′		30.15*	765.8*	74	23.3	95	SSE			6		10		SW		Mod'ate	SE	Misty.	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 19° 03′, W. 104° 17′		29.92*	760.0*	78	25.6	95	NE			1		4		Calm	0			Misty.	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, San Francisco, Cal.		29.94*	760.5*	55	12.8	76	Calm			0		1		NW	0			Clear.	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic N. 49° 16′, W. 26° 17′		29.80*	756.9*	57	13.9	??	NNW			5				N	Blank	Mod'ate	N	D. clouds.	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic, N. 40° 44′, W. 71° 42′		29.54*	750.3*	55	12.8	??	W			6				W	0	Mod'ate	W	D. clouds.	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 38° 15′, W. 69° 39′		29.68	753.9	66.5	19.2	78	WSW			4		10		W	6 hours		4	W	Rainy.
S. S. Leipzig																			Capt. Undütsch.
S. S. Nürnberg																			Capt. F. Pfeiffer.
S. S. Ohio																			Capt. A. Jaeger.
																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		29.77*	756.1*	56	13.3	94	N			1		10		N	Light			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		29.79	756.7	57	13.9	87	SSE			2		10		SE	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 49° 07′ W. 21° 42′		29.53*	750.0*				N	30	13.4			10		N		Heavy	NW	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Porto Cabello, Venezuela		29.88	758.9	81	27.2	78	Calm	0	0			2ks		SE	0.64 in or 16.3 mm.			Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d},) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 20, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			29.93	760.3	75.2	24.0	82	Calm			0		5			0	0	Cloudy	Kesxuche.
Algiers			29.91	759.8	81.7	27.6	59	Calm			0		2			Inap.	Inap.	Fair	Touriliere.
La Calle			30.00	762.1	78.1	25.6	56	NNE			1		3			0	0	Pretty fair.	Foufrede.
Tunis			30.07	763.7	79.0	26.1	48	E			3		4			0	0	Cloudy	Jacques.
Sfax			30.14	765.5	80.6	27.0	.....	NNW			5		1			0	0	Very fair.	Gau.
Saida			29.99	761.8	70.9	21.6	45	S			4		4			0	0	Cloudy	Herbin.
Tebessa			30.03	762.8	82.4	28.0	29	W			3		2			0	0	Fair	Watrin.
Geriville			30.00	762.1	76.6	24.8	27	S			3		9			0	0	Covered	Brugniaux.
Laghouat			30.13	765.3	83.8	28.8	24	N			1		1			0	0	Very fair	Bertrand.
Biskra			30.07	763.7	87.8	31.0	37	E			3		1			0	0	Very fair	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.37	746.9	29.90	759.5	66.6	19.2	68	SW			4		7			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.11	739.8	29.86	758.5	59.4	15.2	85	WSW			1		5			0.063	1.6		Dr. Wierzbiski
Eperies	28.98	736.2	29.85	758.1	60.1	15.6	87	Calm			0		6c;s		N	0.106	2.70		Julius Mikolik.
Gratz	28.66	728.0	29.89	759.3	60.4	15.8	73	SSE			2		2			0	0		Andreas Rospini.
Hermannstadt	28.47	723.0	29.91	759.8	64.9	18.3	57	NW			3		5			0	0		Prof. A. Gottschling.
Kremsmünster	28.55	725.2	29.87	758.8	57.6	14.2	74	W			2		8			0	0		Prof. O. Wagner.
Lemberg	28.84	732.6	29.81	757.1	58.6	14.8	82	SW			1		5			0.59	15.0		Dr. T. Stanecki.
Pola	29.84	757.8	29.95	760.6	66.9	19.4	81	SW			1		4ks			0.024	0.6		I.R.Hydrographic Office.
Szathmar	29.50	749.3	29.96	760.9	68.3	17.4	78	S			2		7			0.697	17.7		Julius Csics, S. J.
Szegedin	29.64	752.8	29.91	759.7	64.4	18.0	73	SE			2		6			0.256	6.50		Karl Stancel.
Trieste	29.87	758.6	29.97	761.2	65.8	18.8	87	W			1		4			0	0	Almost clear	P. Busin.
Vienna	29.19	741.5	29.89	759.3	62.1	16.7	69	W			1		3			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																0.020	0.5		Prof. M. Passau.
Brussels	29.60	751.9	29.80	756.9	55.8	13.2	79	W			0		1		W	0.006	0.15		Royal Observatory
Furnes	29.80	756.9	29.82	757.5	58.5	14.7	76	SW			1		10			6	0	Foggy	M. E. de Cae
Maeseyck	29.69	754.0	29.82	757.3	54.7	12.6	90	ESE			2		10					Light rain	M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

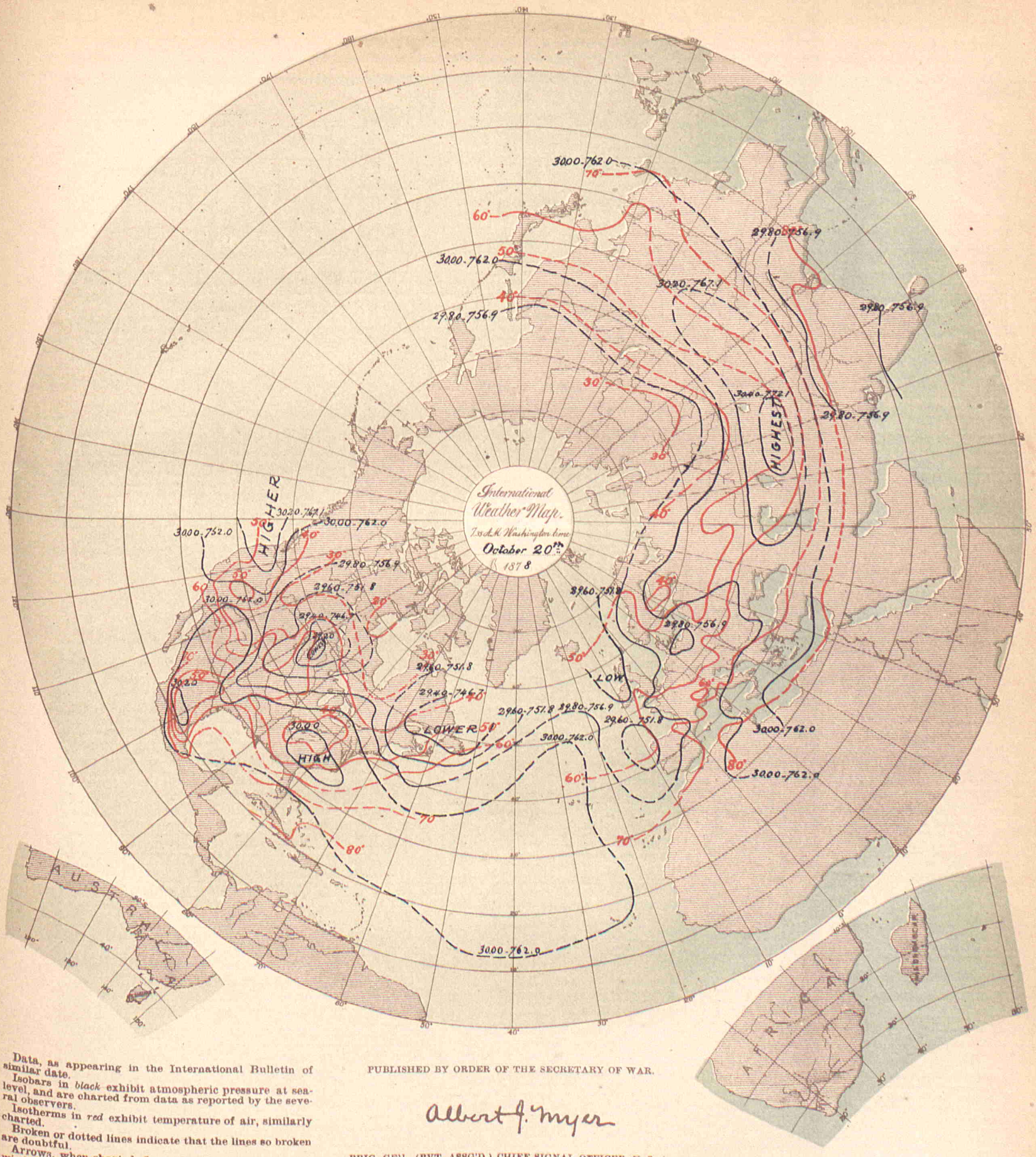
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0—10.	Clouds. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.61	752.1	29.71	754.6	54.0	12.2		SE	16	7.2			7			0.085	2.16	D. clouds	W. Boswell.
Ardrossan																			George Carrick.
Armagh, Observatory			29.60	751.8	56.5	13.6		S	10	4.5									S. Oall.
Bidston, (Liverpool Obs.)			29.73	755.1	56.0	13.3		SE	10	4.5			9					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	80.0	26.7		NE			3		7					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.81	757.2	55.0	12.8		ENE			0		10					Raining	H. Todd. [H. O.
Cardington			29.82	757.4	57.0	13.9		SE			1		10					Foggy	John McLaren.
Chatham, School M. E.	29.68	753.9	29.81	757.2	58.2	14.6		Calm			0		9					Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.32	719.3	29.77	756.1	56.8	13 8		E			2		5					Fine	Alexander Watt.
Donaghadee	29.59	751.6	29.62	752.3	56	13.3		S			3		10					Overcast	J. Mac Gowan.
Dover	29.78	756.4	29.80	756.9	58	14.4		SW			1		7					Gloomy	J. Costello.
Falmouth, Observatory	29.58	751.3	29.81	757.2	58.3	14.6		SSW			2		10					Overcast	The Staff.
Fort Napier, (Natal)	27.34	694.4	29.66	753.4	72.0	22.2		NE			3		3					D. clouds	Pvt. G. Salmon, A. H. O.
Free Town, (Sierra Leone)	29.71	754.6	29.94	760.5	86	30.0		W			1		3					D. clouds	
Galway, Queen's College			29.56	750.8	57	13.9		SSW			2		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.83	757.7	29.80	759.2				E			2		5			Blank	Blank	Gloomy	Corpl. Wm. Allen, A. H. O.
Glasgow, Observatory	29.48	748.3	29.66	753.4	54 9	12.7		S			6		10					Threatening	D. G. Maclean.
Great Yarmouth	29.81	757.2	29.82	757.4	56	13.3		ESE			2		6					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.63	752.6	29.80	756.9	59.2	15.1		SW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.61	752.1	29.83	757.7	61.5	16.4		SSE			1		8					D. clouds	Dr. S. E. Hoskins, F. R. S.
Helston			29.82	757.4	61	16.1		SW			0		k			0.15	3.8	Fair	M. P. Moyle.
Holyhead	29.64	752.8	29.70	754.4	59	15.0		SSW			3		8					D. clouds	John Tilston.
Jersey	29.56	750.8	29.85	758.2	59.5	15.3		SW			1		10					Gloomy	J. Fisher.
Kew, Observatory	29.78	756.4	29.81	757.2	58.2	14.6		SE	4	1.8			10					Overcast	The Staff.
Kingstown	29.62	752.3	29.65	753.1	61	16.1		S			3		8					Overcast	George Mitchell.
Leicester, Museum			29.78	756.4	54.6	12 6		SW			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.92	760.0	29.99	761.7	78	25.6		SSE			1		0					Blue sky	Sergt. Beckett.
Nairn	29.54	750.3	29.63	752.6	52	11.1		SW			2		10					Raining	W. D. Penny.
Nassau, (Bahamas)			29.96	761.0	78.5	25.8		SE			1		10					Drizzling	C. S. Duncombe.
Nottingham, Observatory	29.61	752.1	29.89	756.9	55.5	13.1		SE			1		10n		Calm	0.021	0.53	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.26	743.2	29.78	756.4	54.0	12.2		S			2		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.80	756.9	55	12.8		S			1		10					Overcast	H. E. Bellamy.
Plymouth	29.74	755.4	29.81	757.2	59.6	15.3		SE			1		10					Overcast	John Merrifield.
Roche's Point	29.65	753.1	29.69	754.1	59	15.0		SW			4		5					Misty	W. Kennedy.
Saint Ann's Head																			John C. Walker.
Sandwick Manse, (Orkneys.			29.60	751.8	52.5	11.4		S	19	8.5			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			30.01	762.2	70.2	21.2		SW			1		6					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.53	750.0	29.81	757.2	54.5	12.5		S			1		10			0.02	0.5	Overcast	W. F. Cooper.
Silloth, Rectory	29.67	753.6	29.70	754.4	55.8	13.2	92	Calm			0		10			0.530	13.46	Raining	C. Edith Redford.
Stonyhurst, Observatory	29.35	745.5	29.76	755.9	53.5	11.9		S			1		10					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.60	751.8	29.81	757.2	57.1	13.9		Calm			0		10					Foggy	Rev. C. H. Griffith, F. M. S.
Thurso	29.56	750.8	29.61	752.1	52	11.1		SSE			2		9					Raining	John Trotter.
Truro, Royal Institution			29.79	756.7	64	17.8		S			2		10					Gloomy	W. Newcombe.
Valencia, Observatory	29.64	752.8	29.67	753.6	58.9	14.9		SW	18	8.0			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.64	752.8	57.0	13.9	78	N			1		10n			0.01	0.3	Covered	Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.83	757.7	30.02	762.6	77.3	25.2	56	E	14.0	6.3		0	1		SE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.78	756.4	29.88	758.9	67.0	19.4	49	NW	12	5.4			3			0	0		R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0tc 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer corrected. Inches.	Millimeters.	Reduced. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind from—	Miles per hour.	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper from—	Lower from—	Sea or swell. Height scale 0—9	Direction from—	Weather.	Observer.
Brig Catherine, N. 43° 40', W. 48° 50'			29.96	761.0	50	10.0		S			6		10			5		Foggy	Capt. Alex. Wilson.
Barque Commewyne, N. 20° 5', W. 48° 55'			30.05	763.3	84	28.9		ENE			5		4			2	ENE	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle																			Capt. W. Waring.
Barque Margaret Smith, N. 21° 40', W. 75° 0'			29.94	760.5	83	28.3					6		5		SSE		N	D. clouds	Capt. D. W. A. Quaile
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	OBSERVER.
Punta Arenas	.....	.....	.....	.....	67.1	19.5	100	Calm	.....	.....	0	.....	10sn	.....	.....	Inap.	Inap.	.....	Mr. Ansart.
San José	26.22	666.0	29.94	760.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.78	756.4	29.83	757.6	52.2	11.2	86	E	.....	.....	4	.....	10	.....	.....	.....	.....	Raining
Fanöe	29.80	756.8	29.82	757.3	53.1	11.7	87	NE	.....	.....	4	.....	10	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	29.38	746.3	29.42	747.2	52.7	11.5	92	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	Raining
Vestervig	29.68	753.9	29.85	758.2	50.7	10.4	98	E	.....	.....	4	.....	6	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.36	745.7	29.91	759.7	61.5	16.4	87	SW	.....	.....	1	.....	5	E	NE	0.193	4.9	Cloudy	Collignon, Director.
Amiens, Normal School	29.72	755.0	29.83	757.7	59.0	15.0	89	NE	.....	.....	2	.....	0	.....	.....	0	0	Clear	Bonvallet, Director.
Avignon, Normal School	29.88	758.9	29.96	760.9	68.0	20	67	ENE	.....	.....	1	.....	2	.....	.....	0	0	Slightly cl'dy	M. Giraud, Director.
Bar-sur-Seine	29.34	745.1	29.88	758.9	63.1	17.3	66	W	.....	.....	3	.....	5kn	.....	W	0.071	1.8	Cloudy	C. Saillard.
Beauvais, Normal School	29.58	751.4	29.86	758.5	62.4	16.9	79	.....	.....	.....	.....	.....	.....	.....	.....	0.965	24.50	.....	Frere Eugene Marie, Director.
Besançon, Normal School	29.06	738.2	29.94	760.5	62.6	17	72	SE	.....	.....	6	.....	2	.....	W	0.20	5.	Slightly cl'dy	M. Carre, Director.
Bourg-en-Bresse, N. School	29.04	737.7	29.97	761.1	59.0	15	87	S	.....	.....	4	2c	.....	S	.....	0	0	Slightly cl'dy	M. Mariot, Director.
Bourges, Normal School	29.34	745.2	29.88	759.0	62.4	16.9	81	SE	.....	.....	2	2c	.....	SE	.....	0.248	6.30	Slightly cl'dy	A. Waquet, Director.
Brest, Naval Observatory	29.51	749.6	29.76	755.8	65.1	18.4	80	Calm	.....	.....	0	.....	9	.....	Calm	0.010	0.25	.....	M.de Rermaur, Director.
Carcassonne, Normal School	29.54	750.2	29.95	760.6	64.4	18	71	W	.....	.....	2	.....	5	W	W	0	0	Cloudy	Septembre, Director.
Caen	29.76	755.9	29.83	757.7	64.4	18	65	S	.....	.....	2	.....	5	.....	W	0.520	13.2	Cloudy	M. Lair, Director.
Chartres, Normal School	29.34	745.1	29.89	759.1	64.0	17.8	88	SE	.....	.....	2	.....	7	.....	N	0.59	15.	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.55	750.5	29.86	758.5	67.9	14.4	91	W	.....	.....	2	.....	8kn	.....	.....	0.453	11.5	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.54	725.0	29.85	758.3	68.4	20.2	59	S	.....	.....	1	.....	10	.....	SW	0.024	0.6	Covered	Alluard, Director.
Commercy, Normal School	29.04	737.6	29.91	759.8	56.1	13.4	86	W	.....	.....	4	.....	n	.....	W	0.35	9.	.....	Dr. Coulet, Director
Commune de Gréasque*	28.83	732.2	29.97	761 2	78.2	22.9	37	SE	.....	.....	1	.....	5	SW	.....	0	0	½ covered	M. Klna.
Grenoble, Normal School	29.15	740.3	29.90	759.4	61.9	16.6	73	ENE	.....	.....	1	.....	1cs	.....	.....	0.20	5.	Slightly cl'dy	M. Allard, Director.
La Roche-sur-Yon, N. School	29.65	753.2	29.86	758.4	66.2	19.0	79	W	.....	.....	2	.....	5	.....	E	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.61	752.1	29.91	759.8	63.5	17.5	72	SW	.....	.....	1	.....	5	S	SW	0.91	23.	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.00	736.5	29.90	759.4	61.7	16.5	79	SSW	.....	.....	1	.....	2	.....	W	0.181	4.60	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	29.78	755.2	29.83	757.7	62.6	17.0	88	ESE	.....	.....	1	.....	.....	.....	SE	0 224	5.7	.....	Lt T. Carré, Director.
Mâcon, Normal School	29.98	761.6	30.02	762.4	60.8	16	94	S	.....	.....	1	.....	10	.....	.....	0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.85	732.9	29.89	759.1	56.7	13.7	84	SSW	.....	.....	3	.....	10kn	.....	NE	0.12	3.	Covered	M. Barbier, Director.
Nismes, Normal School	29.74	755.5	29.94	760.5	74.5	23.6	62	S	.....	.....	1	.....	2	.....	S	0	0	Slightly cl'dy	Boyer, Director.
Orleans	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Privas, Normal School	28.97	735.7	30.03	762.7	57.4	14.1	65	N	.....	.....	1	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	25.17	639.2	.....	.....	50.7	10.4	80	W	.....	.....	1	.....	8	.....	W	0.012	0.3	.....	Alluard, Director.
Rochefort, Naval Obs'y	29.82	757.5	29.85	758.3	64.4	18.0	92	SE	.....	.....	1	.....	10	SE	SE	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.77	756.1	29.85	758.3	63.7	17 0	77	SSW	.....	.....	1	.....	5	.....	SW	0.768	19.5	Cloudy	Frere Lucard, Director.
Saint Malo (Port)	.....	.....	29.81	757.2	66.2	19.0	67	S	.....	.....	2	.....	1	.....	SSW	0.014	0.36	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.70	754.3	29.86	758.5	63.7	17.6	83	W	.....	.....	0–1	.....	10	W	W	0.969	23.1	.....	E. Renou.
Tarbes, Normal School	28.70	728.9	29.76	755.9	62.6	17	70	SSW	.....	.....	2	.....	0	.....	.....	0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.29	744.0	30.09	761.9	59.2	15.1	91	NW	.....	.....	1	.....	10	.....	S	0	0	Covered	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.89	759.1	29.91	759.8	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.67	17.	.....	L'Abbé Marchési.
Lyons, Observatory	.....	.....	29.90	759.5	67.6	19.8	57	.....	.....	.....	.....	.....	7	.....	.....	0.020	0.5	.....	.....
Marseilles, Observatory	.....	.....	29.94	760.5	71.4	21.9	63	WNW	.....	.....	0–1	.....	4	.....	.....	0	0	Cloudy	The Staff.
Mont-Louis	24.87	631.8	30.19	766.8	54.0	12.2	55	WSW	.....	.....	4	.....	2	.....	SW	0.118	3.0	.....	M. Cave.
Nice	.....	.....	29.96	760.9	65.8	18.8	70	E	.....	.....	3	.....	5	.....	.....	0	0	⅛ Covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.68	753.3	29.85	758.3	64.6	18.1	76	W	.....	.....	2	.....	10	.....	WSW	0.811	20.6	.....	Marié Davy, Director
Perpignan	.....	.....	29.95	760.6	63.3	17.4	79	S	7.4	3.33	.....	.....	10	.....	SE	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.50	571.5	.....	.....	45.5	7.5	.....	SSW	.....	.....	4–6	.....	6	.....	.....	0.055	1.4	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.19	741.5	29.91	759.8	66.4	19.1	67	SSE	.....	.....	4	.....	2	.....	.....	0	0	.....	B. Bailand.
Tours	29 66	753.3	29.85	758.3	65.3	18.5	71	SW	.....	.....	1	.....	3	.....	W	0.012	0.3	.....	C. Marquet.
Versailles	.....	.....	29.87	758.7	64.8	18.2	60	WNW	.....	.....	1	.....	9	.....	.....	0.591	14.99	Very cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.16	766.0	30.18	766.6	59.7	15.4	100	E	4.0	1.8	.....	.....	4ks	.....	.....	0.193	4.9	Cloudy	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.95	735.2	29.78	756.5	55.9	13.3	83	W			2		9	W		0.512	13.0	Raining	Prof. Dr. Hoh.
Berlin	29.62	752.3	29.79	756.6	57.9	14.4	77	SE			1		7			0.130	3.3		Prof. Arndt.
Breslau	29.33	744.9	29.85	758.3	60.6	15.9	66	SW			1		6			0	0		Royal University Obs'y
Carlsruhe	29.41	747.0	29.83	757.7	55.8	13.2	93	SW			4		10			0.268	6.8		Albert Senz.
Cassel	29.23	742.5	29.84	757.8	54.7	12.6	84	E			2		2	E		0	0	Raining	Dr. H. Möhl.
Crefeld	29.63	752.5	29.79	756.6	52.3	11.3	89	E			3		10			0	0	Foggy	Director Lose.
Emden	29.84	757.9	29.87	758.8	55.0	12.8	86	NE			1		10			0.	0		Prof. Prestel.
Frankfort on the Main	29.47	748.5	29.83	757.7	56.8	13.8		SSW			1		10			0.311	7.9		Physical Society.
Friedrichshafen	28.48	723.3	29.89	759.1	60.8	16.0	85	SSW			2		6	WSW		0	0		M. Wilhelm.
Hamburg	29.72	755.0	29.80	756.8	55.6	13.1	88	Calm			0		10ks			Blank	Blank		Captain F. Hegemann.
Kiel	29.77	756.1	29.78	756.5	55 0	12.8	91	NE			2		10			0.188	4.77		Prof. G. Karsten.
Königsberg, (Prussia)	29.75	755.7	29.84	757.8	50.0	10.0	87	E			3		8			0	0		Prof. E Luther.
Köslin			29.77	756.2	52.0	11.1		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.42	747.2	29.84	757.9	50.7	10.4	91	SW			1		8	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.85	758.2	29.90	759.4	53.2	11.8	71	E			3		10						Reinbrecht and Skalweit.
Neufahrwasser	29.83	757.7	29.85	758.1	52.5	11.4	91	SE			2		10			0.209	5.3		A. Lothes.
Posen	29.58	751.3	29.87	758.6	57.4	14.1	94	W			2		9			0.012	0.3		Dr. Magener.
Strassburg (in Alsace)	29.34	745.3	29.89	759.1	56.7	13.7	93	S			2		10	W		0.080	2.03	Raining	Astronomical Observatory.
Stuttgart	28.92	734.6	29.85	758.2	56.5	13.6	88	W			1		10			0.067	1.7	Raining	Prof. Schoder.
Treves, (Trier)	29.26	743.3	29.78	756.5	56.1	13.4	93	W			3		10			0.009	0.22	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.35	720.1	29.82	757.5	55.0	12.8	87	SW	2.9	1.3			10		W	0.114	2.9		Dr. Von Bebber.
Wustrow, Naval School	29.74	755.5	29.77	756.1	54.7	12.6	93	NE			2		10s			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SER

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.70	754.3	30.08	764.0	78.1	25.6		SW			1.0		c					Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.30	744.2	29.77	756.1	90.3	32.4	35	Calm					0			0	0.	Blue sky	
Bombay	29.77	756.1	29.81	757.1	81.7	27.6	87	SSW	10	4.5			10	SSE	S	1.24	31.5	Overcast	
Poona	27.81	706.4	29.82	757.5	75.0	23.9	91	W					10		W	1.08	27.4	Raining	
Lahore	28.97	735.9	29.71	754 7	78.9	26.1	51	Calm	1.9	0.8						0	0	Blue sky	
Belgaum	27.31	693.6	29.86	758.4	72.7	22.6	88	W	7	3.1			9		W	0.02	0.5	D. clouds	
Roorkee	28.81	731.9	29.71	754.5	81.4	27.4	52	Calm	2	0.9						0	0		
Agra	29.14	740.2	29.70	754.2	89.7	32.1	33	NW								0	0		
Nagpur	28.73	729.7	29.76	755.8	86.6	30.3	59	Calm	1.5	0.7			9		SE	0	0	D. clouds	
Lucknow	29.36	745.6	29.72	754.9	90.2	32.3	41	Calm	1.1	0.5						0	0	Blue sky	
Allahabad	29.39	746.6	29.70	754.4	81.9	27.7	49	Calm	0.6	0.3			1			0	0	D. clouds	
Patna	29.55	750.6	29.73	755.2	82.7	28.2	67	W	0.4	0.2			2	W	W	0	0		
Hazaribagh	27.75	704.8	29.75	755.7	78.8	26.0	45	NW	5	2.2			0			0	0	Blue sky	
Cuttack	29.67	753.7	29.76	755.8	81.5	27.5	69	NW	1.2	0.5			2			0	0	D. clouds	
Calcutta (Alipore)	29.72	754.9	29.74	755.4	79.7	26.5	97	SW	4.0	1.8			3			0	0	D. clouds	
Goalpara	29.32	744.7	29.71	754.6	81.3	27.4	74	NNW	1.5	0.7			0			0	0	Blue sky	
Chittagong	29.68	753.9	29.77	756.2	78.9	26.1	87	Calm	1.9	0.8			2			0	0	Misty	
Sibsagar	29.42	747.1	29.76	755.8	73.3	22.9	83	NE	0.8	0.4			10	W	W	1.88	47.8	Gloomy	
Jubbulpore	28.44	722.2	29.79	756.6	84.3	29.1	51	Calm	1.0	0.4			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.57	751.0	29.98	761.4	64.9	18.3	72	S	1.3	0.6	.....	.....	6	.....	.....	0.039	1.0	.....	Prof. Giovanni Clodig.
Padua	29.86	758.4	29.97	761.2	61.3	16.3	83	Calm	0	0	.....	.....	7	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.75	755.6	29.94	760.4	61.2	16.2	81	S	0.7	0.3	.....	.....	6	N	.....	0.075	1.9	.....	Conte Alm. Da Schio.
Bergamo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. Trionfini Carlo.
Milan	29.44	747.7	29.95	760.8	62.2	16.8	73	NE	.....	.....	1	.....	7	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.07	738.4	29.98	761.4	60.1	15.6	85	SE	2.5	1.1	.....	.....	3	NE	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.06	712.8	29.97	761.1	57.2	14.0	72	W	.....	.....	2	.....	8	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.74	755.3	29.96	760.9	65.3	18.5	70	ENE	.....	.....	4	.....	7	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.79	756.6	29.96	760.9	69.3	20.7	63	SE	6.3	2.8	.....	.....	6	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.68	753.9	30.00	761.9	60.6	15.9	78	NNE	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.73	755.2	29.99	761.7	66.2	19.0	85	NNW	.....	.....	2	.....	6	W	.....	1.150	29.2	.....	Cav. F. Meucci
Leghorn	29.88	759 0	29.97	761.2	71.1	21.7	79	WSW	9.8	4.4	.....	.....	7	WSW	.....	0.567	14.4	.....	Prof. P. Monte.
Pesaro	29.91	759.6	29.96	760.9	67.1	19.5	83	S	3.1	1.4	.....	.....	8	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.47	723.1	30.01	762.3	64.4	18.0	69	SW	.....	.....	2	.....	5	.....	.....	0.098	2.5	.....	Prof. P. Serpieri
Rome	29.86	758.5	30.04	762.9	72.0	22.2	63	SW	9.4	4.2	.....	.....	2	.....	.....	0.394	10.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.85	758.3	30.05	763.3	75.2	24.0	56	SW	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.80	756.8	30.05	763.2	75.9	24.4	68	S	11.9	5.3	.....	.....	4	SW	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.82	757.5	30.01	762.3	73.0	22.8	67	SE	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.18	741.1	30.05	763.2	76.6	24.8	69	SW	0	0	.....	.....	6	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.82	757.4	30.07	763.7	74.3	23.5	56	NE	3.1	1.4	.....	.....	1	.....	.....	0.028	0.7	.....	Prof. G. Cacciatore.
Syracuse	29.98	761.6	30.06	763.4	74.1	23.4	85	Calm	0	0	.....	.....	9	SW	.....	0	0	.....	Prof. V. Giuliaro.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.88	758.9	30.08	764.0	64.2	17.9	78	N	2.1	0.9	.....	.....	10s	.....	.....	0	0	Cloudy	
Tokei (Yeddo) Observatory	30.11	764.8	30.17	766.3	56.3	13.5	88	ENE	3.3	1.5	.....	.....	10s	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	55.7	13.2	72	N	.....	.....	4	0	0	.....	.....	0	0	Clear.	P. Ceballos.
Guadalajara	25.10	637.4	30.27	768 8	44.2	6.8	67	SW	.....	.....	2	2	0	.....	.....	0	0	Clear	Prof. L. Perez.
Leon	24.44	721.0	30.07	764.0	49.5	9.7	75	SW	.....	.....	1	1c	0	Calm	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.12	587.1	30.26	768.6	45.9	7.7	83	Calm	0	0	.....	0	10k	.....	NE	0	0	Foggy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	42.6	5.9	77	W	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	30.00	761.9	30.01	762.2	68	20	81	W	.....	.....	1	1	0	N	.....	0.213	5.4	Clear.	M. M. Cházaro.
San Luis Potosi	24.22	614.0	30.14	765.6	42.0	5.6	24	ESE	.....	.....	.....	0	0	.....	.....	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.07	763.6	30.10	764.3	69.8	21.0	69	WNW	2.2	1.0	.....	3clk	3slk	.....	.....	Inap	Inap.	½ cloudy	Prof. J. Rossell.
Zacatecas	.....	.....	.....	.....	46.4	8	81	NNE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.29	591.6	30.05	763.4	43.5	6.4	83	E	0.9	0.4	.....	0	0	.....	.....	0	0	Clear	Prof. P. Spina.
Durango	24.17	614.0	30.02	762.6	57.2	14.0	82	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.36	720.2	29.98	761.5	77.7	25.4	78	Calm	.....	.....	0	0	1	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.91	759.6	30.06	763.4	66.6	19.2	.....	Calm	.....	.....	0	1cs	2ks	.....	.....	0.378	9.6	Clear	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.82	757.5	29.82	757.5	56.1	13.4	.....	SW	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Groningen	29.76	756.0	29.82	757.4	55.0	12.8	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Helder	29.80	757.0	29.80	757.0	52.2	11.2	.....	E	.....	.....	1	.....	.....	.....	.....	0	0	.....	
Hellevoetsluis	29.80	756.9	29.80	756.9	52.2	11.2	95	ENE	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.77	756.2	29.82	757.4	50.5	10.3	91	E	.....	.....	2	.....	8	.....	.....	0	0	Very cloudy	H. v d Bru...
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter; at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.83	757.7	29.89	759.1	53.6	12.0	65	SSE	6.0	2.7	.....	.....	10	.....	.....	0	0	.....	
Brönö	29.84	757.9	29.88	758.9	52.2	11.2	52	SW	9	4	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.82	757.3*	29.96	761.0	49.3	9.6	57	ENE	0	0	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.70	754.3	29.74	755.4	48.2	9.0	84	SW	18	8	.....	.....	10	.....	.....	0.031	0.8	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.84	757.8	30.03	762.7	60.6	15.9	73	N	11.2	5.0	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.69	728.6	29.70	754.4	65.8	18.8	81	SSW	27.3	12.2	.....	.....	10	SSW	.....	0.185	4.7	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.75	755.7	29.84	757.9	69.4	20.8	67	WSW	9.4	4.2	.....	.....	3	.....	.....	0.322	8.2	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.30	744.3	29.66	753.3	66.2	19.0	78	SSW	28.6	12.8	.....	.....	8	SW	.....	0.398	10.1	.....	The Staff.
Fonta Delgada, (Azores)	29.90	759.4	29.97	761.2	65.5	18 6	60	NNE	19.9	8.9	.....	.....	4	.....	.....	0.126	3.2	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. H. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 16° 54', W. 25° 4'	.....	.....	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M T. Guimaraes, Com'd't.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	
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.....	.....	.....	.....	

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.40	746.7	29.82	757.3	58.1	14.5	87	S	4	2	.....	.....	10ks	.....	.....	.....	.....	Heavy clouds. ..	Astronomical Obs.
Wilna	29.52	749.8	29.94	760.5	48.7	9.3	89	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Heavy clouds ...	Astronomical Obs.
Dorpat	29.86	758.5	30.11	764.8	46.4	8.0	76	ESE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Welbrauch.
St. Petersburg	30.11	764.7	30.12	765.1	53.6	12.0	68	W	4	2	.....	.....	0 [ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.27	743.6	29.90	759 4	61.0	16.1	82	SE	7	3	.....	.....	10c;n;	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	30.02	762.6	30.10	764 4	68.0	20.0	67	SSW	13	6	.....	.....	6n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.13	765.3	30.15	765.8	65.5	18.6	71	NNE	4	2	.....	.....	3	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.63	752.5	30.18	766.6	48.9	9.4	78	S	7	3	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.90	759.5	30.10	764.6	66.0	18.9	52	SE	2	1	.....	.....	3	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Archangel	29.88	758.9	29.90	759.4	43.7	6.5	94	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselitwerstow.
Tiflis	28.75	730.2	30.15	765.8	65.5	18.6	48	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.35	770.8	30.26	768.7	60.4	15.8	57	SE	7	3	.....	.....	1s	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Krotkowo*	29.65	753.1	30.12	765.1	48.9	9.4	42	S	7	3	.....	.....	9s	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.85	758.2	30.12	765.1	55.4	13.0	63	WSW	2	1	.....	.....	3	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Ekaterinburg	28.97	735.9	29.95	760.6	43.2	6.2	93	W	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.15	765.8	30.39	771.8	56.5	13.6	36	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.82	732.0	30.60	777.1	48.9	6.6	80	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.23	742.4	29.77	756.1	34.5	1.4	93	SW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.39	746.5	29.69	754.2	25.2	— 3 8	96	ESE	18	8	.....	.....	10	.....	.....	.....	.....	Snowing	Marks.
Peking, (China)	29.99	761.7	30.13	765.3	55.6	13.3	90	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.67	753.6	29.76	755.8	36.1	2.3	96	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Raining	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47'. E 48° 24'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.81	757.2	29.91	759.8	72.0	22.2	61	SSE	1.2	0.53	.....	.....	5	.....	.....	0.039	0.99	Solar halo	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.69	754.1	29.74	755.5	74.5	23.6	62	S	2.4	1.07	.....	.....	10	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.86	682.3	.....	.....	66.2	19.0	72	SE	9.5	4.25	.....	.....	9	.....	.....	0.079	2.0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.66	702.5	29.85	758.1	63.0	17.2	78	S	38.0	17.00	.....	0	10	.....	.....	0.055	1.4	Covered	The Staff.
Murcia, Met. Obs'y	29.82	757.3	29.97	761.1	69.8	21.0	81	S	0.6	0.28	.....	5	5	W	.....	0.008	0.21	Misty	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.68	728.4	29.60	751.7	60.3	15.7	86	SE	2.5	1.11	.....	.....	10	.....	.....	0.476	12.1	Raining	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.79	756.6	29.85	758.2	76.8	24.9	86	E	4.5	2.0	.....	10pc	3ks	.....	.....	0.988	23.7	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.81	757.1	29.90	759.6	67.8	19.9	82	SSE	17.1	7.6	.....	0	10	.....	S	0.666	16.9	Raining	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.4	29.99	761.7	82.4	28.0	89	SE	4.6	2.08	.....	3cs	4k	SE	SE	0	0	Cloudy	Leonardo de Toleda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 866 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.5	29.94	760.5	45.3	7.4	.....	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	
Umea	30.00	762.0	30.05	763.3	42.1	5.6	100	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.96	761.0	30.01	762.3	37.4	3.0	96	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.84	757.8	30.01	762.3	50.4	10.2	84	E	.....	.....	2	.....	5	.....	.....	0.004	0.1	.....	
Wisby	29.91	759.7	29.97	761.2	51.4	10.8	54	E	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.94	760.4	30.01	762.3	48.7	9.3	84	SE	.....	.....	.....	.....	10	.....	SE	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.53	724.6	29.92	759.9	66.9	19.4	52	S	.....	.....	2	.....	3	.....	.....	0.150	3.8	.....	The Observatory.
Zurich	28.34	719.7	29.92	760.0	62.2	16.8	66	W	.....	.....	4	.....	4	.....	.....	0.008	0.2	Bright	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.5 mm.; Thermometer, +7.3 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.07	763.8	68.5	20.3	74	SE	2	1.0	.....	.....	4	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.15	765.7	77.4	25.2	.....	S	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.96	760.9	81.5	27.5	69	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.55	750.6	29.87	758.7	38	3.3	.....	SW	3	1.3	.....	0	0	.....	.....	0.69	17.5	Clear	W. R. Bigg.
*Chatham, N. B	29.38	746.2	29.44	747.8	48	8.9	94	SW	4	1.8	.....	.....	10n	.....	SW	0.54	13.7	Light rain	G. A. Blair.
Charlottetown, P. E. Island	29.44	747.8	29.48	748.8	50	10.0	88	SW	12	5.4	.....	.....	10n	.....	SW	0.160	4.06	Sprinkling	H. J. Cundall, C. E.
Cornwall, Ontario	29.55	750.6	29.75	755.6	34.3	1.3	85	W	.....	.....	3	3cs	4s	W	.....	0.396	10.06	Fair	James Smith, M. A.
Dalhousie, N. B	29.22	742.2	29.38	746.2	46.5	8.1	96	W	.....	.....	2	.....	.....	.....	.....	0.66	16.8	Raining	H. A. Johnson.
Esquimault, B. C	29.87	758.7	29.91	759.7	46.8	8.2	100	NW	.....	.....	.....	9cs	0	.....	.....	0.02	0.5	Cloudy	W. H. Bevis.
*Father Point, Quebec	29.34	745.2	29.36	745.7	43	6.1	94	SW	15	6.7	.....	.....	10n	.....	SW	0.67	17.0	Cloudy	J. McWilliams.
Fredericton, N. B	29.41	747.0	29.47	748.5	48.3	9.1	89	SW	6	2.7	.....	0	3s	.....	.....	0.213	5.41	Fair	Prof. Harrison.
*Fort Garry Manitoba	28.48	723.4	29.29	744.0	44	6.7	92	E	10	4.5	.....	5k	5n	E	E	0	0	Cloudy	James Stewart.
Granton, Ontario	28.89	733.8	30.02	762.5	37	2.8	.....	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	29.42	747.3	29.55	750.6	49	9.4	85	SW	21	9.4	.....	.....	8n	.....	.....	0.047	1.19	Clearing	F. Allison, M. A.
Hamilton, Ontario	29.66	753.4	30.04	763.0	30.9	4.4	84	SW	.....	.....	2	0	0	.....	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.30	744.2	29.32	744.7	62	16.7	100	SW	.....	.....	6	.....	10	.....	.....	0.13	3.3	Raining	E. Weedon.
*Kingston, Ontario	29.57	751.1	29.91	759.7	34	1.1	77	W	15	6.7	.....	1c	0	Calm	.....	0.43	10.9	Clear	S. Woods, M. A.
Little Glace Bay, N. S	29.46	748.3	29.50	749.3	55.6	18.1	95	S	14	6.3	.....	.....	10n	.....	.....	0.98	24.9	Raining	C. H. Rigby.
*Montreal, Quebec	29.47	748.5	29.67	753.6	38	3.3	86	W	18	8.0	.....	8k	2ks	W	.....	1.02	25.9	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.21	741.9	29.92	760.0	32	0.0	95	N	5	2.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.17	740.9	29.93	760.2	39.7	4.3	82	NW	.....	.....	0	0	7ks	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.04	763.0	38	3.3	91	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.37	746.0	30.03	762.7	41	5.0	82	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	M. Payne.
*Quebec, Quebec	29.17	740.9	29.49	749.0	39	3.9	100	NW	.....	.....	5	.....	10n	.....	NW	0.26	6.6	Heavy rain	Capt. Ashe, R. N
*Rockliffe, Ontario	29.36	745.7	29.83	757.7	36	2.2	55	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. Andrews, N. B	29.42	747.3	29.47	748.5	47	8.3	86	S	6	2.7	.....	.....	10n	.....	.....	0.24	6.1	Cloudy	Dr. Gove.
St. John, N. B	29.29	744.0	29.45	748.0	48	8.9	81	SW	17	7.6	.....	.....	10n	.....	.....	0.12	3.0	Light rain	G. Murdock, C. E.
*Saugeen, Ontario	29.21	741.9	29.93	760.2	49	9.4	81	SW	20	8.9	.....	.....	8ks	.....	W	0	0	Cloudy	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.69	728.7	30.00	762.0	35.0	1.7	95	W	7.5	3.4	.....	1c	0	.....	.....	0	0	Clear	C. J. MacGregor, M.
*Sydney, C. B	29.40	746.7	29.44	747.8	58	14.4	99	SW	11	4.9	.....	.....	10n	.....	SW	0.77	19.6	Light rain	T. C. Hill.
*Toronto, Ontario	29.60	751.8	29.99	761.7	41	5.0	83	W	5	2.2	.....	2ck	2s	NW	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.59	751.6	29.82	757.4	41	5.0	65	NW	22	9.8	.....	1k	0	NW	.....	0.03	0.8	Clear	
Alpena, Michigan	29.21	741.9	29.86	758.4	43	6.1	83	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Atlanta, Georgia	29.00	736.6	30.19	766.8	42	5.6	65	E	9	4.0	.....	0	Sm'e	.....	E	0	0	Clear	
Atlantic City, New Jersey	30.05	763.3	30.06	763.5	45	7.2	60	W	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Augusta, Georgia	30.06	763.5	30.25	768.3	41	5.0	91	Calm	0	0	.....	.....	Fog	.....	W	0	0	Foggy	
Baltimore, Maryland	30.08	764.0	30.13	765.3	45	7.2	68	W	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Barnegat, New Jersey	30.01	762.2	30.03	762.7	46	7.8	62	W	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.54	699.5	29.40	746.7	52	11.1	54	NW	24	10.7	.....	1cs	Sm'e	NW	.....	0	0	Clear	
Boerne, Texas	28.52	724.4	.....	.....	55	12.8	56	S	8	3.6	.....	0	0	.....	.....	0	0	Smoky	
Boise City, Idaho	27.18	690.4	30.14	765.5	42	5.6	49	N	8	3.5	.....	5k	0	NW	.....	0	0	Clear	
Boston, Massachusetts	29.57	751.1	29.72	754.9	45	7.2	53	SW	17	7.6	.....	6c;cs;k	0	W	.....	0	0	Fair	
Brackettville, Texas	28.82	732.0	29.85	758.2	53	11.7	50	Calm	0	0	.....	2c	0	N	.....	0	0	Fair	
Breckenridge, Minnesota	28.19	716.0	29.14	740.1	43	6.1	75	SE	20	8.9	.....	2cs	0	SW	.....	0	0	Clear	
Brownsville, Texas	29.97	761.2	30.04	763.0	62	16.7	94	W	1	0.4	.....	0	8ks	.....	S	0	0	Fair	
Buffalo, New York	29.30	744.2	30.00	762.0	45	7.2	76	W	13	5.8	.....	0	0	.....	.....	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	55	12.8	12	Calm	.....	.....	0	0	0	.....	.....	0	.0	Clear	
Burlington, Vermont	29.50	749.3	29.76	755.9	38	3.3	81	NW	12	5.4	.....	.....	10n	.....	W	0.23	5.8	Light rain	
Cairo, Illinois	29.66	753.4	30.06	763.5	45	7.2	76	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	24.54	623.3	29.54	750.3	40	4.4	49	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.18	639.6	29.98	761.5	56	13.3	24	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.75	679.4	30.24	768.1	41	5.0	19	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.42	696.5	29.99	761.7	36	2.2	71	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	53	11.7	67	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	30.10	764.5	30.13	765.3	52	11.1	54	NW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	50	10.0	72	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	30.07	763.8	30.10	764.5	48	8.9	71	NW	34	15.2	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.22	742.2	29.93	760.2	52	11.1	86	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
Charleston, South Carolina	30.19	766.8	30.26	768.6	52	11.1	60	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Cheyenne, Wyoming	23.69	601.7	29.63	752.6	50	10.0	79	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.19	741.4	29.88	758.9	44	6.7	84	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cincinnati, Ohio	29.50	749.3	30.18	766.6	38	3.3	81	SE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Cleveland, Ohio	29.37	746.0	30.11	764.8	40	4.4	73	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Coleman City, Texas	28.11	714.0	29.79	756.7	47	5.3	41	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.29	744.0	30.16	766.1	35	1.7	80	SE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	27.96	710.2	29.61	752.1	55	12.8	68	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.53	750.0	30.01	762.2	48	8.9	78	S	4	1.8	.....	2cs	0	Calm	.....	0	0	Clear	
Davenport, Iowa	29.19	741.4	29.82	757.4	48	8.9	70	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Decatur, Texas	28.68	728.5	29.83	757.7	53	11.7	80	SE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.15	740.4	29.95	760.7	53	11.7	73	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.46	621.3	29.68	753.9	51	10.6	16	S	4	1.8	.....	2c	0	Calm	.....	0	0	Clear	
Des Moines, Iowa	28.77	730.7	29.63	752.6	51	10.6	65	SW	9	4.0	.....	0	Haze	.....	Calm	0	0	Clear	
Detroit, Michigan	29.34	745.2	30.02	762.5	42	5.6	66	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Dodge City, Kansas	27.04	686.8	29.28	743.7	46	7.8	54	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.06	738.1	29.76	755.9	45	7.2	76	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	28.87	733.3	29.53	750.0	43	6.1	83	NE	7	3.1	.....	2cs	2s	N	NE	0	0	Fair	
Eagle Pass, Texas	29.30	744.2	30.06	763.5	48	8.9	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.40	746.7	29.47	748.5	47	8.3	77	SW	14	6.3	.....	.....	10s	.....	SW	0.86	9.1	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	53	11.7	80	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	64	17.8	44	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.33	745.0	30.06	763.5	44	6.7	84	SW	9	4.0	.....	5k	0	W	.....	0	0	Fair	
Escanaba, Michigan	29.11	739.4	29.76	755.9	44	6.7	84	SW	5	2.2	.....	5c	0	SW	.....	0	0	Fair	
Florence, Arizona	28.40	721.3	30.00	762.0	60	15.6	44	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.45	646.4	29.51	749.5	46	7.8	39	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.16	639.0	30.12	765.0	65	18.3	23	SW	3	1.3	.....	2k	0	SW	.....	0	0	Fair	
Fort Gibson, Indian Ter	29.36	745.7	29.90	759.4	53	11.7	67	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	28.55	725.2	29.80	756.9	53	11.7	42	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.66	702.6	29.53	750.0	60	15.6	55	SW	8	3.6	.....	5ck	0	NW	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.62	726.9	29.72	754.9	52	11.1	54	SE	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.20	716.3	29.72	754.9	65	18.3	73	S	3	1.3	.....	2k	0	Calm	.....	0	0	Fair	
Galveston, Texas	30.02	762.5	30.06	763.5	64	17.8	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Graham, Texas	28.77	730.7	29.79	756.7	60	15.6	44	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.23	742.4	29.88	758.9	47	8.3	77	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Indianapolis, Indiana	29.28	743.7	30.08	764.0	43	6.1	67	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Indianola, Texas	30.02	762.5	30.04	763.0	66	18.9	74	SE	8	3.6	.....	1k	0	Calm	.....	0	0	Clear	
Jacksboro, Texas	28.69	728.7	29.81	757.2	54	12.2	67	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.10	764.5	30.13	765.3	55	12.8	68	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.19	741.4	29.80	756.9	51	10.6	65	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Key West, Florida	29.89	759.2	29.92	760.0	75	23.9	90	NE	19	8.5	.....	.....	10n	.....	NE	0.03	0.8	Light rain	
Kittyhawk, North Carolina	30.15	765.8	30.17	766.3	48	8.9	85	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Knoxville, Tennessee	29.16	740.7	30.22	767.6	34	1.1	90	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Clear	
La Crosse, Wisconsin	28.90	734.0	29.62	752.3	48	8.9	85	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	50	10.0	58	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.54	750.3	29.88	758.9	56	13.3	87	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.40	619.8	29.67	753.6	38	3.3	72	NW	8	3.6	.....	.....	10s	.....	NW	0	0	Cloudy	
Leavenworth, Kansas	28.86	733.0	29.68	753.9	53	11.7	54	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.62	752.3	29.96	761.0	48	8.9	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.57	751.1	30.15	765.8	40	4.4	73	S	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.47	748.5	30.17	766.3	43	6.1	58	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	28.77	730.7	29.75	755.6	46	7.8	62	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Marquette, Michigan	28.99	736.3	29.69	754.1	41	5.0	74	SW	18	8.0	.....	5c	0	SW	.....	0	0	Fair	
Mason, Texas	28.30	718.8	30.04	763.0	55	12.8	80	Calm	0	0	.....	2cs	0	W	.....	0	0	Fair	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.08	738.6	29.81	757.2	44	6.7	76	SE	12	5.4	.....	0	1s	.....	Calm	0	0	Clear	
Mobile, Alabama	30.12	765.0	30.16	766.1	43.5	6.4	92	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.95	760.7	30.20	767.1	40	4.4	91	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.11	739.4	30.20	767.1	39	3.9	82	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.25	590.5	29.61	752.1	16	— 8.9	100	NW	36	16.1	.....	.....	Fog	.....	NW	0.37	9.4	Foggy	
Nashville, Tennessee	29.63	752.6	30.19	766.8	36	2.2	90	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Smoky	
New Haven, Connecticut	29.76	755.9	29.88	758.9	50	10.0	65	W	11	4.9	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	29.80	756.9	29.85	758.2	46	7.8	54	W	12	5.4	.....	0	1s	.....	W	0	0	Clear	
New Orleans, Louisiana	30.06	763.5	30.12	765.0	56	13.3	68	N	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	29.76	755.9	29.82	757.4	47	8.3	62	SW	24	10.7	.....	5k	0	W	.....	0	0	Fair	
New York, New York	29.77	756.1	29.95	760.7	43	6.1	59	W	30	13.4	.....	0	0	.....	.....	0	0	Clear	
Norfolk, Virginia	30.11	764.8	30.17	766.3	48	8.9	63	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
North Platte, Nebraska	26.65	676.9	29.16	740.7	42	5.6	83	NW	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Olympia, Washington Ter.	30.07	763.8	30.11	764.8	44	6.7	84	SW	7	3.1	.....	0	4s	.....	SW	0.29	7.4	Fair	
Omaha, Nebraska	28.47	723.1	29.51	749.5	52	11.1	60	S	12	5.4	.....	0	Sm'e	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.61	752.1	29.93	760.2	49	9.4	51	NW	20	8.9	.....	0	0	.....	.....	0.64	16.3	Clear	
Pembina, Dakota	28.43	722.1	29.23	742.4	45	7.2	84	E	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.01	762.2	30.06	763.5	42	5.6	74	W	7	3.1	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.75	730.2	.....	.....	53	11.7	42	NE	.....	.....	1	0	0	.....	.....	0	0	Fair	
Pike's Peak, Colorado	17.66	447.2	29.87	758.7	24	— 4.4	48	SW	40	17.9	.....	5c	0	W	.....	0	0	Fair	
Pioche, Nevada	23.99	609.3	29.76	755.9	55	12.8	17	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.17	766.3	38	3.3	61	W	4	1.8	.....	0	0	.....	.....	0.16	4.1	Clear	
Port Huron, Michigan	29.33	745.0	30.00	762.0	42	5.6	74	SW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.54	750.3	29.58	751.3	44	6.7	68	W	10	4.5	.....	8k	0	Calm	.....	0.05	1.3	Cloudy	
Portland, Oregon	30.14	765.5	30.24	768.1	45.0	7.2	84	S	5	2.2	.....	0	2ks	.....	W	0.38	9.7	Clear	
Prescott, Arizona	24.76	628.9	30.12	765.0	30	8.9	55	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.15	740.4	29.98	761.5	54	12.2	73	SE	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	68	20.0	74	NE	12	5.4	.....	5cs	2s	Calm	NE	0	0	Fair	
Red Bluff, California	29.78	756.4	30.14	765.5	54	12.2	48	NW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.83	757.7	30.05	763 3	59	15.0	58	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.33	745.0	29.95	760.7	42	5.6	83	W	12	5.4	.....	8ck	0	W	.....	0.01	0.3	Fair	
Roseburg, Oregon	29.78	756.4	30.37	771.4	45.0	7.2	92	NW	2	0.9	.....	.....	10n	.....	Calm	0.38	9.7	Heavy rain	
Sacramento, California	29.99	761.7	30.08	764.0	70.5	10.3	97	N	8	3.6	.....	Haze	Fog	Calm	N	0	0	Fair	
St. Louis, Missouri	29.41	747.0	29.99	761.7	46	7.8	77	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.13	765.3	30.14	765.5	45	7.2	84	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.63	727.2	29.43	747.5	44	6.7	75	SE	14	6.3	.....	5cs	0	Calm	.....	0	0	Fair	
Salt Lake City, Utah	25.60	650.2	29.93	760.2	44.0	6.7	37	N	24	10.7	.....	.....	10ks	.....	W	0	0	Threatening	
San Antonio, Texas	29.30	744.2	29.90	759.4	52	11.1	86	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.90	759.4	29.98	761.5	57	13.9	94	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.42	747.3	30.11	764.8	41	5.0	82	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	29.93	760.2	29.97	761.2	48	8.9	56	W	36	16.1	.....	0	0	.....	.....	0.02	0.5	Clear	
San Francisco, California	30.04	763.0	30.10	764.5	55	12.8	93	SW	3	1.3	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	37	2.8	45	N	4	1.8	.....	2cs	0	Calm	.....	0	0	Fair	
Savannah, Georgia	30.11	764.8	30.21	767.3	48	8.9	85	N	5	2.2	.....	5k	0	E	.....	0	0	Fair	
Shreveport, Louisiana	29.86	758.4	30.08	764.0	48	8.9	78	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.27	616.4	.....	.....	55	12.8	53	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.22	767.6	30.26	768.3	45	7.2	76	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	29.68	753.9	29.81	757.2	46	7.8	54	W	4	1.8	.....	5k	0	W	.....	0.01	0.3	Fair	
Stockton, Texas	26.86	682.2	29.86	758.4	68	20.0	50	SW	16	7.2	.....	1k	0	Calm	.....	0	0	Clear	
Thatcher's Island, Mass	29.63	752.6	29.69	754.1	43	6.1	67	W	24	10.7	.....	5cs	2s	W	W	0	0	Fair	
Toledo, Ohio	29.36	745.5	30.04	763.0	41	5.0	74	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	65	18.3	33	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.19	766.8	57	13.9	63	NE	20	8.9	.....	0	5ks	.....	SE	0	0	Fair	
Umatilla, Oregon	29.74	755.4	.....	.....	46.0	7.8	58	SW	28	12.5	.....	0	1ks	.....	SW	0.01	0.3	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	31	— 0.6	100	NW	.....	.....	2	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.09	738.9	29.92	760.0	50	10.0	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.91	759.7	30.18	766.6	45	7.2	76	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	28.90	697.0	29.38	746.2	29	— 1.7	78	W	16	7.2	.....	.....	10s	.....	N	0.07	1.8	Cloudy	
Visalia, California	29.67	753.6	30.04	763.0	49	9.4	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.05	763.3	30.16	766.1	44	6.7	76	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	46	7.8	40	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.15	765.8	30.23	767.8	48	8.1	83	N	2	0.9	.....	0	0	.....	.....	0	0	Fair	
Winnemucca, Nevada	29.71	753.0	30.07	763.8	42	5.6	34	NW	20	8.9	.....	0	2s	.....	SW	0	0	Cloudy	
Wood's Holl, Mass.	29.72	754.9	29.78	756.4	47	8.3	62	NW	24	10.7	.....	.....	8ks	.....	NW	0	0	Cloudy	
Yankton, Dakota	28.16	715.3	29.39	746.5	52	11.1	47	SW	8	1.3	.....	5c	0	SW	.....	0	0	Fair	
Yuma, Arizona	29.69	754.1	29.85	758.2	59	15.0	76	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	14.5	— 9.7	91	NW	11	4.9	.....	4ck	4s	NW	NW	0.05	1.3	Cloudy	J. Fortescue, W. Wood.
York Factory, B. A.	29.67	761.1	29.62	752.3	78	25.6	86	SE	2.4	1.1	.....	.....	10n	.....	SE	0.71	18.0	Cloudy	Chas. Hasselbrink.
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	80	26.7	82	SE	.....	.....	1	0	8n	.....	SE	Blank	Blank	.....	Robert Mason.
Santiago de Cuba, W. I.	29.85	758.2	29.88	758.9	81	27.2	82	E	6	2.7	.....	2c	2n	NE	.....	0.08	2.0	Cloudy	G. O. Gellich.
St. Thomas, W. I.	.....	.....	.....	.....	83	28.3	91	SE	17	7.6	.....	10c	8n	SE	N	1.40	35.6	.....	James Gall.
Kingston, Jamaica, W. I.	30.04	763 0	30.05	763.3	83	28.3	91	SE	16.7	7.5	.....	.....	.....	.....	.....	0.18	4.6	Raining	F. M. Everett.
Navassa, W. I.	29.81	757.2	29.89	759.2	80	26.7	.....	NE	.....	.....	2	3c	5k	E	.....	0	0	Fair	C. J. Hering
Paramaribo, D. Guiana, S. A.	29.96	761.0	29.96	761.0	84	28.9	75	Calm	0	0	.....	.....	10n	.....	.....	0.38	9.7	.....	Thomas Herran.
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	66.2	19.0	87	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Elworthy.
Portland, Jamaica, W. I.	29.70	754.4	30.01	762.2	81	27.2	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,102 ft., or 1,673.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 ?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.0 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 6,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,822 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.20	767.1	52	11.1	52	11.1	79	NE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	29.69‡	754.1‡	.....	.....	41	5.0	83	WNW	9	4.0	.....	.....	5?	.....	.....	0	0	.....	.....	Clear?.....	
Naval Hospital, Yokohama, Japan.....	30.11*	764.8*	65	18.3	60	15.6	76	N	.....	.....	2	.....	9k;s	.....	NW	0	0	.....	.....	Cloudy	
Adams. Valparaiso, Chili.....	30.10	764.5	65	18.3	58	14.4	82	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	Smooth	.....	Fair	
Alaska. Callao, Peru.....	30.22	767.6	69	20.6	63	17.2	89	S	.....	.....	1	.....	10	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance. Smyrna, Turkey.....	30.07‡	763 8‡	.....	.....	73	22.8	63	W	.....	.....	2	.....	8	.....	W	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.13	765.3	65	18.3	67	19.4	74	NE	.....	.....	1	.....	5	.....	NE	.....	.....	Smooth	.....	Fair	
Canonicus. New Orleans, La.....	30.04	763.0	44	6.7	51	10.6	93	N	.....	.....	5	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	29.95‡	760.7‡	.....	.....	44	6.7	62	WNW	19	8.5	.....	.....	0	.....	.....	0	0	.....	.....	Squally.....	
Constitution. Havre, France.....	.....	.....	.....	.....	61	16.1	100	SW	.....	.....	2	.....	7	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Despatch. Constantinople, Turkey	30.10‡	764.5‡	.....	.....	70	21.1	66	SW	.....	.....	2	.....	2	.....	S	.....	.....	.....	.....	Fair	
Essex. Cape Town.....	30.07	763.8	63	17.2	64	17.8	94	W	.....	.....	2	.....	8	.....	W	.....	.....	.....	.....	Cloudy.....	
Franklin. Norfolk, Va.....	30.27	768.8	69	20.6	47	8.3	85	NNW	8.4	3.8	.....	.....	1	.....	NW	0	0	.....	.....	Clear.....	
Gettysburg Port Said, Egypt.....	29.95‡	760.7‡	.....	.....	80	26.7	96	NNW	.....	.....	3-4	.....	0	.....	.....	0	0	Smooth	SW	Blue sky.....	
Guard. N. 8° 31′, W. 41° 30′.....	29.98	761.5	83	28.3	82	27.8	83	SSW	.....	.....	3	.....	8	.....	SSW	.....	.....	Smooth	.....	Cloudy.....	
Hartford. S. 25° 39′ W. 46° 55′.....	29.86	758.4	75	23.9	73	22.8	85	NE	9.6	4.3	.....	.....	10	.....	.....	0.10	2.5	Smooth	.....	Overcast.....	
Marion. Trieste, Austria.....	29.96	761.0	66	18.9	66	18.9	79	NW	.....	.....	2	.....	10	.....	NW	Mod'ate	Mod'ate	.....	.....	Cloudy.....	
Michigan. Erie, Pa.....	29.99†	761.7†	.....	.....	49	9.4	78	W	.....	.....	6	.....	2	.....	W	.....	.....	Mod'ate	SSW	Fair.....	
Monocacy. Yokohama, Japan	30.16‡	766.1‡	.....	.....	60	15.6	76	N	.....	.....	1-2	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
New Hampshire. Port Royal, S. C.....	30.23	767.8	56	13.3	63	17.2	73	NE	17	7.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Onward. Callao, Peru.....	30.10†	764.5†	.....	.....	64	17.8	83	S	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos. Tientsin, China.....	30.19	766.8	68	20.0	58	14.4	88	SSE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Passaic. Washington, D. C.....	.....	.....	.....	.....	45	7.2	92	S	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Santa Cruz.....	30.12	765.0	82	27.8	80	26.7	87	E	.....	.....	2	.....	10	.....	E	.....	.....	Light	E	Cloudy	
Powhatan. Boston, Mass.....	29.70‡	754.4‡	.....	.....	46	7.8	62	WNW	7.2	3.2	.....	.....	2	.....	.....	0	0	.....	.....	Fair.....	
Quinnebaug. Cape Henry, Va.....	30.17‡	766.3‡	.....	.....	53	11.7	73	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China	30.02	762.5	80	26.7	79	26.1	95	ESE	.....	.....	1-2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo. Brownsville, Texas.....	29.97	761.2	63	17.2	64	17.8	94	WNW	.....	.....	2	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Santee. Annapolis, Md.....	30.08‡	764.0‡	.....	.....	46	7.8	62	W	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga. Philadelphia, Pa.....	29.95	760.7	.....	.....	45	7.2	61	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	.....	Clear.....	
St. Louis. League Island, Pa	29.97	761.2	62	16.7	46	7.8	77	W	17	7.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Supply. Havre, France.....	29.90	759.4	63	17.2	63	17.2	89	W	.....	.....	0-1	.....	8	.....	W	.....	.....	.....	.....	Cloudy.....	
Swatara. Boston, Mass.....	29.72‡	754.9‡	.....	.....	46	7.8	62	WNW	.....	.....	5	.....	8	.....	.....	.....	.....	.....	.....	Squally.....	
Trenton. Villafranca, France.....	29.93‡	760.2‡	.....	.....	71	21.7	62	ESE	.....	.....	2	.....	2	.....	S;E	0	0	.....	.....	Clear.....	
Vandalia. Port Mahon, Minorca Id., Baleric Ids.	29.99‡	761.7‡	.....	.....	76	24.4	50	SSW	.....	.....	1	.....	5	.....	SW	.....	.....	.....	.....	Fair	
Wabash. Boston, Mass.....	.....	.....	.....	.....	43	6.1	61	W	8	3.6	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Upper 0—10.	Lower 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S. City of Peking, N. 34° 48′, E. 141° 58′		30.11*	764.8*	73	22.8	95	NNE			5		9		NNE		Small	NNE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 39° 48′, W. 124° 18′		30.18*	766.6*	57	13.9	81	NNW			3		0			0	Small	NW	Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES. Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic N. 50° 30′, W. 18° 00′		29.80*	756.9*	53	11.7	??	NNW			3		10			0	Mod'ate	NW	Gloomy	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 40° 40′, W. 67° 30′		29.82†	757.4†	53	11.7		WSW			6		10k		W	0	Moderate; high	W	Squally	Capt. W. H. Thompson.
S. S. Celtic, New York, N. Y.		29.85*	758.2*	52	11.1	??	NW			6				W	0			D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES. Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.																			
S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES. Furnished by the coöperation of A. Schumacher & Co., Agents.																			
S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 39° 50′, W. 62° 56′		29.76	755.9	67.5	19.7	64	WSW			4		2		W	2 hours	5	WNW	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.01*	762.2*	68	14.4	100	SW			1		1		SW	0			Fine	Captain Sargent.
S. S. Ohio, Liverpool		29.77	756.1	68	14.4	94	SSE			2		10		Calm	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.																			
RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Rundle.
S. S. Switzerland, N. 48° 38′ W. 28° 23′		30.03*	762.7*				WNW	12	5.4			10		W		Mod'ate	WNW	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.
*Aneroid; regulated to standard at Antwerp.																			
ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			
NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.																			
MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Porto Cabello, Venezuela		29.87	758.7	82	27.8	75	Calm	0	0			2ck		Calm	0			Clear	Capt. James Jorgensen.
NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.																			

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 21, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.95	760 6	79.7	26.5	61	NNW	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair.	Kesxuche.
Algiers	.....	.....	29.86	758.5	81.0	27.2	45	NW	.....	.....	3	.....	5	.....	.....	0	0	Cloudy	Tourliere.
La Calle	.....	.....	29.93	760.1	89.2	31.8	44	WSW	.....	.....	5	.....	8	.....	.....	0.004	0.1	Very cloudy	Foufrede.
Tunis	.....	.....	29.95	760.8	85.5	29.7	32	W	.....	.....	1	.....	10	.....	.....	0	0	Covered	Jacques.
Sfax	.....	.....	30.06	763.5	80.6	27.0	.....	W	.....	.....	5	.....	4	.....	.....	0	0	Cloudy	Gau.
Saida	.....	.....	29.97	761.2	82.4	28.0	33	S	.....	.....	3	.....	2	.....	.....	0.134	3.4	Fair	Herbin.
Tebessa	.....	.....	29.98	761.4	78.3	25.7	30	WSW	.....	.....	5	.....	3	.....	.....	Blank	Blank	Pretty fair.	Watrin.
Geriville	.....	.....	30.00	762.0	68.0	20.0	39	S	.....	.....	7	.....	7	.....	.....	0	0	Very cloudy	Brugniaux.
Laghouat	.....	.....	30.07	763.6	74.5	23.6	55	Calm	.....	.....	0	.....	3	.....	.....	0	0	Pretty fair.	Bertrand.
Biskra	.....	.....	30.02	762.5	80.0	30.0	38	SE	.....	.....	3	.....	3	.....	.....	0.039	1.0	Pretty fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.33	745.0	29.86	758.5	68.4	20.2	68	SW	.....	.....	3	.....	6	.....	.....	0	0	.....	Prof. Ivan Storlr.
Cracow, I. R. Observatory	29.07	738.4	29.82	757.5	63.0	17.2	68	SW	.....	.....	1	.....	9	.....	.....	0.008	0.2	.....	Dr. Wierzbiski
Eperies	29.00	736.6	29.86	758.5	60.8	16.0	79	S	.....	.....	2	.....	4cs	.....	N	0	0	.....	Julius Mikolia.
Gratz	28.62	727.0	29.85	758.2	59.0	15.0	83	S	.....	.....	1	.....	5	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.52	724.4	29.97	761.1	65.7	18.7	67	S	.....	.....	1	.....	3	.....	.....	0.063	1.60	.....	Prof. A. Gottschling.
Kremsmünster	28.45	722.6	29.76	756.0	58.1	14.5	81	ENE	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.83	732.2	29.79	756.6	60.8	16.0	89	S	.....	.....	2	.....	8	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.82	757.3	29.93	760.2	68.9	20.5	84	S	.....	.....	1	.....	10ks	.....	.....	0.012	0.3	.....	R.Hydrographic Office.
Szathmar	29.51	749.5	29.97	761.1	64.8	18.2	76	SE	.....	.....	3	.....	5	.....	.....	0.378	9.6	.....	Julius Osics, S. J.
Szegedin	29.63	752.6	29.90	759.5	68.0	20.0	66	S	.....	.....	1	.....	8	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.86	758.5	29.97	761.1	62.4	16.9	93	Calm	.....	.....	0	.....	10	.....	.....	2.008	51.0	Rainy	P. Busin.
Vienna	29.12	739.7	29.83	757.6	59.0	15.0	89	ESE	.....	.....	1	.....	2	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.18	715.7	29.65	753.2	57.0	13.9	82	SW	.....	.....	3	.....	10	.....	.....	0.047	1.2	.....	Prof. M. Passau.
Brussels	29.34	745.1	29.53	750.1	60.6	15.9	80	S	.....	.....	3	.....	10	.....	SSW	0.087	2.20	.....	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.071	1.8	Light rain	M. E. de Cne
Maeseyck	29.47	748.4	29.60	751.7	61.9	16.6	82	S	.....	.....	2	.....	7	.....	.....	0.213	5.4	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

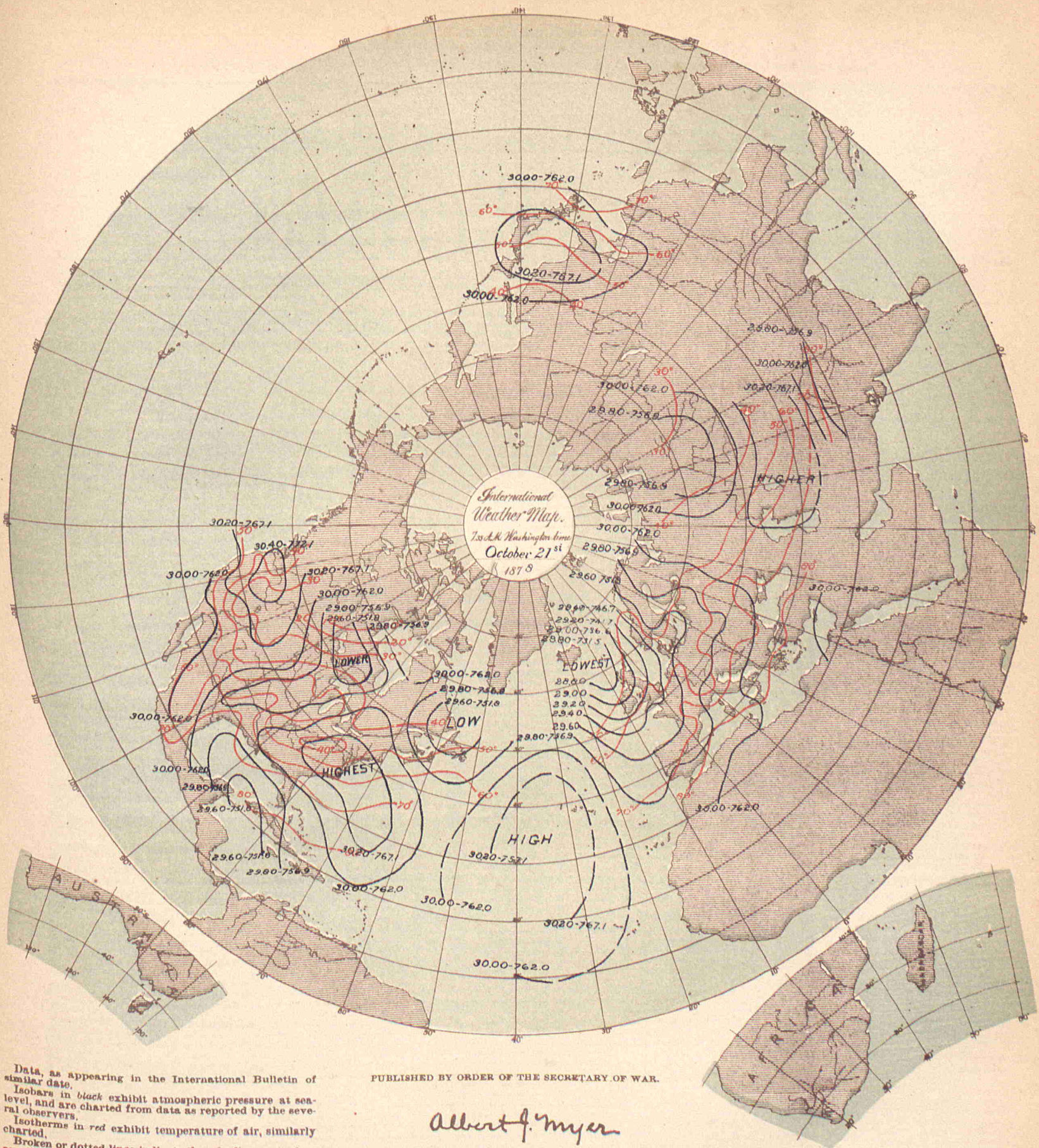
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.91	734.3	29.01	736.8	52.4	11.3		SSE	23	10.3			10			0.340	8.64	Drizzling	W. Boswell.
Ardrossan	28.96	735.6	28.97	735.8	50	10.0		SSW			2		5					Raining	George Carrick.
Armagh, Observatory			29.00	736.6	50.6	10.3		SSW	14	6.3			10					Raining	S. Call.
Bidston, (Liverpool Obs.)			29.22	742.2	53.8	12.1		SSW	20	8.9			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.83	732.3	29.24	742.7	54.1	12.3		SW			5		10			0.02	0.5	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.84	757.9	29.89	759.2	80.0	26 7		NE			3		8					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.38	746.2	60.0	15.6		S			1		10					Overcast	H. Todd. [H.C.
Cardington			29.39	746.5	62.0	16.7		SW			1		8					Overcast	John McLaren.
Chatham, School M. E.	29.29	744.0	29.41	747.0	66.2	19.0		S			2		6					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.05	712.5	29.50	749.3	52.2	11.2		W			3		10					Foggy	Alexander Watt.
Donaghadee	29.07	738.4	29.10	739.1	50	10.0		SW			4		10					Raining	J. Mac Gowan.
Dover	29.39	746.5	29.42	747.3	59	15.0		SW			3		5					⅗ clouded	J. Costello.
Falmouth, Observatory	29.22	742.2	29.45	748.0	57.7	14.3		SW			2		10					Overcast	The Staff.
Fort Napier, (Natal)	27.44	697.0	29.76	755.9	75.6	24.2		NE			2		1					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	84	28.9		S			0		5					D. clouds	
Galway, Queen's College			29.00	736.6	49	9.4		W			3		10					Raining	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.84	757.9	29.89	759.2				W			3		5					D. clouds	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.79	731.3	28.99	736.3	47.9	8.8		SW			3		10					Raining	D. G. Maclean.
Great Yarmouth	29.42	747.3	29.43	747.5	60	15.6		S			3		6					Hazy	G. T. Watson.
Greenwich, Royal Obs'y	29.23	742.4	29.40	746.7	64.4	18.0		SW			1		9					Nearly overcast	The Staff, for G. B. Airy.
Guernsey	29.27	743.4	29.49	749.0	61	16.1		WSW			1		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston			29.51	749.5	60	15.6		SW			1		k			0.2	5.	Fine	M. P. Moyle.
Holyhead	29.06	738.1	29.11	739.4	54	12.2		SW			6		10					Raining	John Tilston.
Jersey	29.23	742.4	29.51	749.5	62.8	17.1		W			3		6					D. clouds	J. Fisher.
Kew, Observatory	29.36	745.7	29.40	746.7	61.7	16.5		SSW	11	4.9			8					D. clouds	The Staff.
Kingstown	29.08	738.6	29.11	739.4	55	12.8		S			4		10					Overcast	George Mitchell.
Leicester, Museum			29.31	744.5	57.7	14.3		SW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.92	760.0	30.00	762 0	80	26.7		SW			1		4c					D. clouds	Sergt. Beckett.
Nairn	28.84	732.5	28.93	734.8	47	8.3		Calm			0		10					Raining	W. D. Penny.
Nassau, (Bahamas)			29.86	758.4	74.2	23.4		SE			1		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham, Observatory	29.14	740.1	29.33	745.0	58.5	14.7		S			4		10k;d		SSW	0.075	1.91	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.80	731.5	29.31	744.5	55.2	12.9		SSW			6		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.38	746.2	59	15.0		S			2		10					Overcast	H.E. Bellamy.
Plymouth	29.37	746 0	29.44	747.8	58.6	14.8		SW			3		10					Overcast	John Merrifield.
Roche's Point	29.15	740.4	29.19	741.4	56	13.3		SW			6		10					Misty	W. Kennedy.
Saint Ann's Head	29.14	740.1	29.30	744.2	55	12.8		SW			6		10					Raining	John C. Walker.
Sandwick Manse, (Orkneys.			28.94	735.1	49	9.4		SW	8	3.6			10					Raining	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.96	761.0	72.2	22.3		SW			1		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	29.04	737 6	29.31	744.5	55.9	13.3		S			3		10			0.41	10.4	Overcast	W. F. Cooper.
Silloth, Rectory	29.05	737.9	29.05	738.6	52.0	11.1	89	W			4		10			0.868	22.04	Raining	C. Edith Redford.
Stonyhurst Observatory	28.82	732.0	29.23	742.4	52.1	11.2		SSW			4		10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.23	742.4	29.44	747.8	62.5	16.9		S			1		9					D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	28.87	733.3	28.93	734.8	49	9.4		SSW			2		10					Gloomy	John Trotter.
Truro, Royal Institution			29.45	748.0	60	15.6		SW			6		10					Raining	W. Newcombe.
Valencia, Observatory	29.13	739.9	29.15	740.4	52.5	11.4		W	28	12.5			10					Raining	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.88	758.9	53.0	11.7	82	NW			2		4k			0.03	0.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.79	756.7	29.98	761.6	77.2	25.1	60	E	14.0	6.3		2	2	WSW		0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.98	761.5	30.08	764.0	54.0	12.2	86	S	2	0.9			4			0	0	Heavy dew.	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note.—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0tc 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 44° 10′, W. 46° 25′			29.91	759.7	56	13.3		SSW			4	7			4	SSW	Drizzling	Capt. Alex. Wilson.
Barque Commewyne, N. 22° 15′, W. 49° 35′			30.06	763.5	84	28.9		NE			4	2			2	NE	Blue sky	Capt. A. Buchan.
S. S. Gordon Castle N. 39° 55′, W. 70° 45′			30.21	767.3	57	13.9		W			6	0			5	W	Blue sky	Capt. W. Waring.
Barque Margaret Smith, N. 22° 40′, W. 78° 15′			29.86	758.4	82	27.8					6	9				SE	Threatening	Capt. D. W. A. Quaile
Schooner Traveller																		Capt. Alex. Simpson.
Barque Virginia																		Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (RVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26.27	667.2	29.99	761.7	67.1	19 5	100	Calm			0		10s;n			0.3	7.6		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.56	750.9	29.61	752.1	53.1	11.7	79	S			2		5						
Fanöe	29.54	750.4	29.56	750.9	54.3	12.4	86	SSW			4		7						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.76	730.6	28.80	731.5	48.4	9.1	80	SW			4		7						
Vestervig	29.37	746.1	29.54	750.4	52.2	11.2	90	SE			4		8						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.06	738.2	29.61	752.2	60.8	16	98	SW			3		10			0.016	0.4	Covered	Collignon, Director.
Amiens, Normal School	29.45	748.0	29.56	750.7	62.2	16.8	87	NE			2		0			0.08	2.	Clear	Bonvallet, Director.
Avignon, Normal School	29.67	753.6	29.75	755.6	70.9	21.6	69	SE			3		8		SSW	0	0	Very cloudy	M. Giraud, Director.
Bar-sur-Seine	29.08	738.5	29.61	752.1	66.4	19.1	70	SW			2		8kn		SW	0.008	0.2	Very cloudy	C. Saillard.
Beauvais, Normal School	29.26	743.1	29.54	750.2	60.6	15.9	89	S			1		10		S	0.020	0.50	Covered	Frere Eugene Marie, Director.
Besançon, Normal School	29.00	736.7	29.87	758.8	67.1	19.5	61	SE			6		2		SW	0.020	0.5	Slightly cl'dy	M. Carre, Director.
Bourg-en-Bresse, N. School	28.84	732.5	29.76	755.8	64.2	17.9	80	SW			6		5cn		S	0.08	2.	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.08	738.6	29.61	752.2	65.5	18.6	77	SW			1		2ck		SW	0.197	5.00	Slightly cl'dy	A. Waquet, Director.
Brest, Naval Observatory	29.28	743.6	29.52	749.8	64.4	18.0	80	W			1		6		W	0	0		M.de Rermaur, Director.
Carcassonne, Normal School	29.26	743.3	29.66	753.4	69.8	21	68	E			3		5	W	W	0	0	Cloudy	Septembre, Director.
Caen	29.43	747.6	29.50	749.4	59.9	15.5	85	NE			2		8		S	0.094	2.4	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.00	736.5	29.54	750.4	60.1	15.6	93	S			4		10		N	0	0	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.30	744.2	29.61	752.2	58.8	14.9	91	S			2	6c		NW		0	0	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.32	719.3	29.62	752.3	70.5	21.4	62	S			1		8		SW	0.031	0.8	Very cloudy	Allnard, Director.
Commercy, Normal School	28.84	732.5	29.71	754.6	66.3	18.5	95	S			3		kn		S	0.047	1.2		Dr. Coulet, Director.
Commune de Grésque*	28.75	730.3	29.80	756.8	70.0	21.1	51	SE			4		8	S		0.059	1.5	¾ covered	M. Kina.
Grenoble, Normal School	29.01	736.8	29.76	755.9	60.1	15.6	81	E			2		10n		S	0.167	4.25	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.38	746.2	29.59	751.5	64.4	18.0	96	SW			2		8		SW	0.16	4.	Very cloudy	Moullot, Director.
Le Mans, Normal School	29.25	743.0	29.55	750.6	61.2	16.2	66	SW			4		5		W	0.28	7.	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.83	732.2	29.71	754.6	68.4	20.2	53	S			6		5		W	0	0	Cloudy	Baudry, Director.
Lorient, Naval Observatory	29.49	749.0	29.69	754.5	63.3	17.4	84	W			1			NW	W	0.217	5.5		Lt. T. Carré, Director.
Mâcon, Normal School	29.79	756.6	29.82	757.4	64.4	18	90	NNE			3		5		NNE	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	28.66	727.9	29 68	753.8	59.7	15.4	89	SSW			3		10kn		NE	0	0	Covered	M. Barbier, Director.
Nismes, Normal School	29.69	751.7	29.79	756.7	70.2	21.2	65	S			3		2		S	0	0	Slightly cl'dy	Boyer, Director.
Orleans																			
Privas, Normal School	28.78	729.8	29.77	756.2	64.4	18	71	S			6		10	S	S	0.39	10.	Very cloudy	M. Cantier.
Puy de Dome (Summit)	25.01	635.2			51.4	10.8	82	W			1		10		W	0.051	1.3		Allnard, Director.
Rochefort, Naval Obs'y	29.63	752.5	29.66	753.3	66.6	19.2	87	SSW			2		10	WSW	WSW	0.04	1.	Covered	Lt. Decante, Director.
Rouen, Normal School	29.41	747.1	29.59	749.3	59.7	15.4	91	S			1		10			0.020	0.5	Covered	Frere Lucard, Director.
Saint Malo (Port)			29.52	749.7	61.2	16.2	87	W			1		8		WNW	0.080	2.02	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.39	746.4	29.55	750.6	63.9	17.7	79	S			3		10	W	S;SW	0.024	0.6		E. Renou.
Tarbes, Normal School	28.51	724.1	29.56	750.8	64.4	18	62	W			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.02	737.1	29.71	754.6	68.9	20.5	78	SSE			3		10		W	0	0	Covered	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.80	756.8	29.82	757.5	78.8	26										1.69	43.		L'Abbé Marchési.
Lyons, Observatory			29.76	755.8	65.5	18.6	60						9			0.055	1.4		
Marseilles, Observatory			29.82	757.4	73 2	22.9	57	SSE			2		5			0.020	0.50	Cloudy	The Staff.
Mont-Louis	24.08	626.8	29.99	761.8	54.5	12.5	56	S			5		3		SW	0	0		M. Cave.
Nice			29.92	759.9	66.2	19.0	86	SW			1		10			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.27	743.5	29.55	750.5	64.2	17.9	83	SSW			4		9		SSW	0.008	0.2		Marié Davy, Director
Perpignan			29.66	753.4	78.3	25.7	46	SW	22.4	10.00			2		W	0.020	0.5		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Bayiac.
Pic du Midi, (Plantade,) H. P.	22.35	567.6			40.1	4.5		SW			3		10			0.205	5.2	Rainy	Gen'l de Nansouty
Toulouse, Observatory	29.00	736.7	29.72	754.9	70.2	21.2	68	SSE			2		7			0.146	3.70		B. Bailand.
Tours	29.38	746.3	29.58	751.3	68.0	20.0	71	SW			3		5		W	0.130	3 3		C. Marquet.
Versailles			29.56	750.7	63.3	17.4	70	SW			2		10			0.001	0.03	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.88	759.0	29.91	759.6	64.9	18.3	100	SE	3.1	1.4			0			0.020	0.5	Clear	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-1	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.86	733.1	29.70	754.3	58.5	14.7	83	SE	.....	.....	4	.....	10	.....	.....	0.039	1.0	Raining.....	Prof. Dr. Hoh.
Berlin	29.57	751.0	29.74	755.3	54.7	12.6	70	S	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. Arndt.
Breslau	29.26	743.3	29.79	756.7	60.6	15.9	60	WSW	.....	.....	3	.....	3	.....	.....	0	0	.....	Royal University Obs'y
Carlsruhe	29.29	744.0	29.71	754.7	56.1	13.4	88	SW	.....	.....	1	.....	10	.....	.....	0.016	0.4	Light rain...	Albert Senz.
Cassel	29.06	738.1	29.66	753.4	59.7	15.4	77	SE	.....	.....	1	.....	8	SW	.....	0	0	Foggy	Dr. H. Möhl.
Crefeld	29.41	747.1	29.58	751.2	63.1	17.3	72	SE	.....	.....	2	.....	6cs	.....	.....	0	0	.....	Director Lose.
Emden	29.60	751.8	29.63	752.7	56.7	13.7	87	S	.....	.....	3	.....	1	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.34	745.2	29.70	754.3	61.3	16.3	.....	SSW	.....	.....	1	.....	7	.....	.....	0	0	.....	Physical Society.
Friedrichshafen	28.37	720.5	29.78	756.4	56.1	13.4	85	SSW	.....	.....	2	.....	7	SW	.....	0	0	.....	M. Wilhelm.
Hamburg	29.60	751.8	29.67	753.6	47.8	8.8	98	S	.....	.....	2	.....	10	.....	.....	0.008	0.2	.....	Captain F. Hegemann.
Kiel	29.62	752.4	29.64	752.8	52.5	11.4	86	S	.....	.....	2	.....	10	.....	.....	0.032	0.79	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.63	752.5	29.71	754.6	52.0	11.1	92	W	.....	.....	2	.....	6	.....	.....	0.098	2.5	.....	Prof. E. Luther.
Köslin	.....	.....	29.66	753.4	53.6	12.0	.....	SW	.....	.....	2	.....	4	.....	.....	0.051	1.3	.....	H. Müller.
Leipsic, Observatory	29.34	745.1	29.75	755.7	57.0	13.9	84	SSW	.....	.....	1	.....	9	SW	.....	0.028	0.7	.....	Prof. Bruhns.
Memel, Naval School	29.66	753.4	29.71	754.6	53.2	11.8	88	S	.....	.....	2	.....	4ks	.....	.....	0	0	.....	Reinbrecht and Skalweit.
Neufahrwasser	29.71	754.6	29.72	755.0	54.1	12.3	86	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	A. Lothes.
Posen	29.53	750.1	29.82	757.4	55.2	12.9	93	W	.....	.....	1	.....	9	.....	.....	0	0	.....	Dr. Magener.
Strassburg (in Alsace)	29.20	741.6	29.74	755.3	57.6	14.2	92	S	.....	.....	2	.....	10	SW	.....	0.101	2.58	Raining	Astronomical Observatory.
Stuttgart	28.78	730.9	29.70	754.3	58.1	14.5	82	W	.....	.....	1	.....	10	.....	.....	0.051	1.3	Raining.....	Prof. Schoder.
Treves, (Trier)	29.11	739.4	29.63	752.5	60.4	15.8	77	SW	.....	.....	5	.....	10	.....	.....	0.018	0.45	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.86	717.8	29.73	755.1	58.3	14.6	75	S	5.6	2.5	.....	.....	10	.....	W	0.079	2.0	.....	Dr. Von Bebber.
Wustrow, Naval School	29.67	753.5	29.69	754.1	51.4	10.8	82	SSW	.....	.....	5	.....	10ks	.....	.....	0.094	2.4	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.62	752.3	30.00	761.9	81.3	27.4	.....	SW	.....	.....	1.0	.....	.....	.....	.....	.....	.....	Smoky.....	Dr. J. F. J. Schmidt.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	W	.....	0	0	D. clouds.....	
Deesa	29.32	744.8	29.79	756.6	90.4	32.4	36	WNW	.....	.....	.....	.....	9	SW	.....	0	0	D. clouds.....	
Bombay	29.76	756.0	29.80	757.0	81.9	27.7	89	SSW	2	0.9	.....	.....	10	.....	W	0	0	D. clouds.....	
Poona	27.84	707.2	29.85	758.2	77.1	25.1	83	W	.....	.....	.....	.....	.....	.....	.....	0	0	Blue sky.....	
Lahore	29.01	736.9	29.75	755.6	82.0	27.8	33	NW	1.1	0.5	.....	.....	7	E	.....	...	.....	Thunder-storm ..	
Belgaum	27.29	693.2	29.83	757.7	74.5	23.6	80	W	1	0.4	.....	.....	.....	.....	.....	0	0	.....	
Roorkee	28.81	731.8	29.70	754.5	81.0	27.2	35	SW	3	1.3	.....	.....	.....	.....	.....	0	0	.....	
Agra	29.16	740.6	29.71	754.6	59.2	31.8	32	N	.....	.....	.....	.....	.....	.....	.....	1.85	47.0	Thunder storm..	
Nagpur	28.79	731.2	29.84	757.8	75.6	24.2	86	N	2.1	0.9	.....	.....	10	.....	.....	0	0	Blue sky.....	
Lucknow	29.38	746.2	29.77	756.2	69.7	32.1	38	Calm	0.8	0.4	.....	.....	.....	.....	.....	0	0	Blue sky.....	
Allahabad	29.39	746.4	29.69	754.2	82.0	27.8	47	Calm	0.6	0.3	.....	.....	0	.....	.....	0	0	Blue sky.....	
Patna	29.53	750.0	29.71	754.6	83.6	28.7	53	S	0.8	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....	
Hazaribagh	27.74	704.5	29.74	755.6	78.0	25.6	56	WNW	4.2	1.9	.....	.....	0	.....	.....	0	0	Blue sky.....	
Cuttack	29.69	754.1	29.77	756.1	83.0	28.3	71	WSW	1.1	0.5	.....	.....	.....	.....	.....	0	0	Blue sky.....	
Calcutta (Alipore)	29.73	755.1	29.75	755.7	81.2	27.3	80	WSW	2.0	0.9	.....	.....	0	.....	.....	0	0	Blue sky.....	
Goalpara	29.32	744.8	29.71	754.6	79.7	26.5	74	Calm	1.6	0.7	.....	.....	0	.....	.....	0	0	Blue sky.....	
Chittagong	29.69	754.0	29.78	756.4	80.9	27.2	85	SW	.....	.....	.....	.....	4	.....	.....	0	0	Misty.....	
Sibsagar	29.40	746.8	29.74	755.4	76.0	24.4	91	SSE	4.6	2.1	.....	.....	10	W	W	0.75	19.0	D. clouds.....	
Jubbulpore	28.42	721.9	29.79	756.6	78.3	25.7	75	S	1.1	0.5	.....	.....	8	.....	.....	0	0	Thunder.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,892.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.57	751.0	29.97	761.3	60.4	15.8	84	Calm	0	0			9			0	0		Prof. Giovanni Clodig.
Padua	29.85	758.1	29.96	760.9	59.7	15.4	88	N	1.8	0.8			10	W		0	0		Prof. Dott. Lorenzoni
Vicenza	29.76	756.0	29.95	760.8	57.9	14.4	75	NNE	0	0			10			0	0		Cont. Alm. Da Schio.
Bergamo	28.64	727.4	29.96	761.0	56.1	13.4	84	W			1		10			0	0		Prof. Trionfini Carlo.
Milan	29.43	747.5	29.95	760.6	57.2	14.0	92	ENE			2		10			0.327	8.3		Prof. Schiaparelli.
Moncalieri	29.06	738.1	29.97	761.1	57.6	14.2	92	NNW	0.7	0.3			10	NE		0.055	1.4		Prof. P. F. Denza.
Mondovi	28.04	712.1	29.94	760.4	56.7	13.7	81	NW			2		9			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.69	754.0	29.91	759.6	67.1	19.5	70	ENE			2		9	SSW		0.016	0.4		Prof. L. Vassallo.
Genoa	29.74	755.4	29.91	759.6	68.2	20.1	71	Calm	0	0			10	SW		0	0		Prof. G. M. Garibaldi.
Parma	29.65	753.0	29.96	761.0	57.4	14.1	92	E			2		10			0.028	0.7		Prof. P. Pigorini.
Florence	29.68	753.8	29.93	760.3	71.1	21.7	70	SE			2		10	S		0	0		Cav. F. Meucci
Leghorn	29.82	757.3	29.90	759.5	71.1	21.7	80	SE	9.4	4.2			10	S		0.197	5.0		Prof. P. Monte.
Pesaro	29.89	759.1	29.94	760.4	68.2	20.1	81	E	8.1	3.6			8			0	0		Prof. Luigi Guidi.
Urbino	28.45	722.5	29.98	761.4	64.6	18.1	67	SW			1		3			0.346	8.8		Prof. P. Serpieri
Rome	29.81	757.1	29.98	761.5	71.2	21.8	70	SW	5.6	2.5			9			0	0		Prof. P. G. S. Ferrari.
Naples, O. U.	29.82	757.3	30.01	762.3	73.6	23.1	61	SSW			2		6	WSW		0	0		Prof. L. Palmieri.
Lecce	29.77	756.2	30.02	762.5	74.1	23.4	80	S	4.9	2.2			6	S		0	0		Prof. C. De Giorgi
Cagliari	29.68	753.9	29.87	758.7	74.1	23.4	80	SE			2		10	SW		0	0		Prof. A. Pacinotti.
Cosenza	29.13	739.8	29.99	761.8	76.3	24.6	71	SW	0	0			6			0	0		Prof. F. D. Conti.
Palermo	29.74	755.5	29.99	761.8	74.3	23.5	62	ENE	2.5	1.1			9			0	0		Prof. G. Cacciatore.
Syracuse	29.97	761.3	30.05	763.2	73.6	23.1	78	SE	6.3	2.8			8	WSW		0	0		Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.																			Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.79	756.6	29.99	761.7	69.2	20.7	77	E	2.2	1.0			0			0	0	Clear.	
Tokei (Yeddo) Observatory	30.17	766.3	30.24	768.1	53.3	11.8	94	NE	3.5	1.6			1s			0	0	Fair	I. Arai, Director.
Tokei (Yeddo) University																			Prof. P. V. Veeder.

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					60.4	15.8	56	N			4	0	0			0	0	Clear.	P. Ceballos.
Guadalajara	25.08	636.9	30.22	767.6	46.4	8.0	60	SW			1		1		W	0	0	Clear	Prof. L. Perez.
Leon	24.43	620.7	30.05	763.3	51.8	11.0	73	N			1	0	0			0	0	Blue sky	Prof. M. Leal.
Mexico	23.11	587.0	30.22	767.6	47.8	8.8	79	Calm	0	0		0	0			0	0	Fine	Central Observatory.
Pabellon, (Aguascalts)					47.8	8.8	76	Calm			0	0	0			0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	29.91	759.6	29.92	759.9	69.8	21	86	S			2	0	0			0	0	Clear	M. M. Cházaro.
San Luis Potosi	24.19	613.5	30.14	765.6	45.0	7.2	64	E			1	2	0	W		0	0		G. Barroeta, M. D.
Vera-Cruz	29.97	761.3	30.00	761.9	70.7	21.5	77	NW				0	2k			0	0	Foggy	Prof. J. Rossell.
Zacatecas	22.50	572.5	30.14	765.5	48.2	9	94	E			1	0	0			0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.29	591.6	30.05	763.4	43.3	6.3	89	NNW	4.5	2.0		0	0			0	0	Clear.	Prof. P. Spina.
Durango	24.18	614.2	30.03	762.8	58.0	14.4	79	Calm			0	0	0			0	0	Clear	M. V. de Leon, C. E.
Colima	28.34	719.9	29.97	761.3	77.4	25.2	71	E			1	0	1			0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.84	758.0	29.99	761.8	68.9	20.5		Calm			0	0	0			0	0	Dense fog	Antonio Guerra y Guerra.

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.53	750.0	29.53	750.0	61.2	16.2		S			4					0	0		
Groningen	29.52	749.8	29.58	751.2	56.1	13.4		S			1					0	0		
Helder	29.50	749 4	29.50	749.4	56.1	13.4		SE			2					0.071	1.8		
Hellevoetsluis	29.52	749.7	29.52	749.7	63.5	17.5	82	SE			2								
Utrecht	29.52	749.7	29.56	750.9	61.2	16.2	80	SSE			2		5			0.059	1.5	Cloudy	H. v d Bru[illegible]

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.34	745.2	29.39	746.6	55.0	12.8	47	S	21.3	9.5	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.52	749.8	29.56	750.8	49.6	9.8	47	SSE	9	4	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.49	749.0	29.63	752.7	47.8	8.8	71	E	4	2	.....	.....	9	.....	.....	0	0	.....	
Tromsö	29.61	752.2	29.66	753.3	43.5	6.4	88	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.01	762.3	30.21	767.2	60 8	16.0	81	NNW	1.3	0.6	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.79	731.3	29.52	757.5	59.7	15.4	81	SW	9.8	4.4	.....	.....	8	SW	.....	0.260	6.6	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.86	758.5	29.95	760.7	73.2	22.9	60	SE	4.9	2.2	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.41	747.1	29.77	756.1	65.7	18.7	74	SW	19.9	8.9	.....	.....	5	.....	.....	1.000	25.4	.....	The Staff.
Ponta Delgada, (Azores)	30.12	765.0	30.19	766.8	63.3	17.4	63	N	8.1	3.6	.....	.....	10	.....	.....	0.091	2.3	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Naval Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 57′, W. 23° 43′	.....	.....	29.98	761.6	85.1	29.5	.....	NE	.....	.....	3	.....	1	.....	.....	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
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Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.36	745.8	29.78	756.4	59.2	15.1	78	SSW	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.39	746.6	29.81	757.2	53.2	11.8	88	S	4	2	.....	.....	9	.....	.....	.....	.....	Heavy clouds...	Astronomical Obs.
Dorpat	29.53	750.0	29.78	756.3	45.0	7.2	93	ESE	4	2	.....	.....	10n	.....	.....	.....	.....	Light rain...	Prof. Dr. Weihrauch.
St. Petersburg	29.86	758.4	29.87	758.8	50.5	10.3	61	SE	11	5	.....	.....	0	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.28	743.7	29.89	759.3	65.5	18.6	58	W	4	2	.....	.....	5k;ks;c	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.00	762.1	30.02	762.6	66.6	19.2	69	SE	4	2	.....	.....	6	.....	.....	.....	.....	Light clouds	Lagorio.
Moscow	29.50	749.2	30.05	763.3	47.3	8.5	83	SSE	11	5	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.83	757.6	30.03	762.7	70.0	21.1	45	E	4	2	.....	.....	2	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.99	761.7	30.01	762.2	43.7	6.5	94	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.65	727.6	30.04	763.0	66.2	19.0	50	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.15	765.9	30.07	763.8	62.1	16.7	67	SE	7	3	.....	.....	10ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.50	749.4	29.98	761.4	48.9	9.4	79	W	7	3	.....	.....	9ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.76	755.9	30.04	762.9	47.1	8.4	71	W	4	2	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	28.81	731.7	29.78	756.3	43.2	6.2	87	W	13	6	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.98	761.4	30.21	767.7	57.9	14.4	38	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.64	727.4	30.39	771.8	48.9	9.4	76	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.28	743.7	29.81	757.1	38.7	3.7	97	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.65	752.5	29.93	760.3	20.5	— 6.4	76	W	7	3	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.89	759.2	30.03	762.8	53.2	11.8	96	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nikolaievsk, on the Amoor	29.86	758.4	29.95	760.6	33.6	0.9	92	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	.....
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Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.6 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′. E 48° 31′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.68	753.3	29.78	756.5	74.3	23.5	61	SSE	2.1	0.92	.....	.....	2k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.60	751.9	29.66	753.3	73.2	22.9	62	S	4.1	1.82	.....	3	5	SW	.....	0	0	Almost cov.	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.78	680.1	.....	.....	57.2	14.0	89	S	10.4	4.63	.....	.....	9	.....	.....	0.071	1.8	Almost cov.	Domingo Martin y Perez
Madrid, Royal Observatory	27.56	700.0	29.75	755.6	61.0	16.1	72	SW	21.6	9.66	.....	0	10	.....	.....	0.949	24.1	Covered.....	The Staff.
Murcia, Met. Obs'y	29.67	753.7	29.82	757 4	74.8	23.8	64	NE	0.6	0.28	.....	5	4	SE	.....	Inap.	Inap.	Sprinkling...	Diayo Diaz, Director.
Santiago, Met. Obs'y	28.75	730.3	29.62	752.4	66.2	19.0	77	W	4.3	1.94	.....	.....	3	.....	.....	0.409	10.4	Cloudy.....	t. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.53	750.1	29.60	751.8	74.1	23.4	90	N	27.7	12.4	.....	.....	10n	.....	N	0.976	24.8	Stormy.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.81	757.1	29.90	759.5	69.6	20.9	72	WSW	17.1	7.6	.....	2	9	SW	SW	0.545	13.8	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.6	30.00	761.9	78.1	25.6	95	SE	9.3	4.16	.....	5kn	2k	SE	SE	1.540	64.50	Raining.....	Leonardo de Tejada, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level. The elevation of Burgos is 856 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,159.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru'm'tal error and temperature. Inches.	Barometer. Corrected for instru'm'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	760.5	29.94	760.5	42.1	5.6	.....	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	
Umea	29.83	757.6	29.84	757.9	43.5	6.4	79	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.74	755.3	29.71	754.6	43.5	6.4	86	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.39	746.5	29.37	751.0	47.8	8.8	99	ENE	.....	.....	4	.....	10	.....	.....	0.004	0.1	Raining	
Wisby	29.52	749.9	29.58	751.4	50.7	10.4	95	WSW	.....	.....	4	.....	10	.....	.....	0.165	4.2	Raining.....	
Sub-Series.																			
Upsala	29.53	750.0	29.60	751.9	46.4	8.0	94	N	.....	.....	.....	.....	10	.....	NE	0.313	7.95	Raining.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.41	721.6	29.83	757.7	55.4	13.0	96	S	.....	.....	1	.....	9	.....	.....	0	0	Covered.....	The Observatory.
Zurich	28.20	716.2	29.63	757.6	55.8	13.2	85	W	.....	.....	1	.....	8	.....	.....	0.020	0.5	Cloudy.....	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.6 mm.; Thermometer, +1.3 cent.; Relative Humidity, +23 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.02	762.4	68.5	20.3	69	SE	4	2.0	.....	.....	6	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.7	75.6	24.2	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.95	760.6	85.8	29.9	48	W	.....	.....	1	.....	1k	.....	.....	0	0	D. clouds ...	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.61	752.1	29.68	753.9	49.6	9.8	87	NW	5	2.2	.....	2c	5s	NW	.....	0	0	Fair.....	Hon. J. Ferguson.
Brockville, Ontario	29.79	756.7	30.10	764.5	52	11.1	.....	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	W. R. Bigg.
Charlottetown, P. E. Island	29.60	751.8	29.65	753.1	46	7.8	92	W	3	1.3	.....	2k	8s	W	W	0.01	0.3	Cloudy.....	G. A. Blair.
*Chatham, N B	29.61	752.1	29.67	753.6	44	6.7	87	W	8	3.6	.....	.....	10n	.....	Calm	0.140	3.56	Light rain...	H. J. Cundall, C. E.
Cornwall, Ontario	29.85	758.2	30.05	763.3	46.6	8.1	91	W	.....	.....	2	0	0	.....	.....	0	0	Clear.....	James Smith, M. A.
Dalhousie, N. B	29.53	750.0	29.69	754.1	47.5	8.6	81	W	.....	.....	2	.....	.....	.....	.....	0.52	13.2	Cloudy.....	H. A. Johnson.
Esquimault, B. C	30.19	766.8	30.24	768.1	47.3	8.5	100	Calm	.....	.....	.....	.....	10s	.....	.....	0.55	14.0	Overcast.....	W. H. Bevis.
*Father Point, Quebec	29.77	756.1	29.79	756.7	42	5.6	89	SW	24	10.7	.....	.....	10s	.....	Calm	0.37	9.4	Cloudy.....	J. McWilliams.
Fredericton, N. B	29.74	755.4	29.81	757.2	44.4	6.9	81	NW	14	6.3	.....	.....	10s	.....	.....	0.080	2.03	Clearing.....	Prof. Harrison.
*Fort Garry Manitoba	28.74	730.0	29.59	751.6	29	— 1.7	94	W	16	7.2	.....	5k	5n	W	W	0.040	1.02	Cloudy.....	James Stewart.
Granton, Ontario	28.99	736.3	30.11	764.8	44	6.7	.....	S	.....	.....	1	0	0	.....	.....	0	0	Clear.....	James Grant.
*Halifax, N. S	29.58	751.3	29.72	754.9	45	7.2	82	W	13	5.8	.....	.....	10ks	.....	W	0.006	0.15	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.78	756.4	30.15	765.8	49.3	9.6	84	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	Geo. Dickson, M. A.
Heart's Content, N. F	29.64	752.8	29.96	753.4	50	10.0	71	SW	.....	.....	4	2c	2k	W	.....	0.06	1.5	Fine.....	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.13	765.3	55	12.8	81	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	29.59	751.6	29.68	752.6	40.5	8 1	81	W	8	3.6	.....	.....	10n	.....	.....	0.01	0.3	Showery.....	C. H. Rigby.
*Montreal, Quebec	29.87	758.7	30.07	763.8	47	8.3	79	S	13	5.8	.....	0	2s	.....	.....	0.02	0.5	Clear.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.35	745.5	30.06	763.5	42	5.6	96	S	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.36	745.7	30.13	765.3	39.2	4.0	91	Calm	.....	.....	0	0	0	.....	.....	0	0	Hazy.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.44	747.8	30.13	765.5	53	11.7	93	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear.....	H. Morgan.
Port Hastings, N. S	29.62	752.3	29.67	753.6	44.7	7.1	.....	NW	6	2.7	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.46	748.3	30.10	764.5	54	12.2	76	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	M. Payne.
*Quebec, Quebec	29.61	752.1	29.94	760.5	41	5.0	74	SW	.....	.....	3	2k	2s	SW	SW	0.04	1.0	Fair.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.59	751.6	30.06	763.5	36	2.2	95	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	29.80	756.9	29.86	758.4	47	8.3	76	W	2	0.9	.....	2c	2ks	.....	.....	0.08	2.0	Fair	Dr. Gove.
St. John, N. B	29.65	753.1	29.82	757.4	44	6.7	87	NW	12	5.4	.....	10k	0	.....	.....	0.02	0.5	Overcast.....	G. Murdock, C. E.
*Saugeen, Ontario	29.33	745.0	30.05	763.3	47	8.3	76	S	10	4.5	.....	0	0	.....	.....	0	0	Clear.....	K. Stewart.
Stayner, Ontario	29.29	744.0	30.07	763.8	49	9.4	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
Stratford, Ontario	28.80	731.5	30.10	764.5	45.0	7.2	92	SW	6.0	2.7	.....	.....	0	.....	.....	0	0	Clear	C. J. MacGregor, M.
*Sydney, C. B	29.62	752.3	29.66	753.4	47	8.3	80	SW	11	4.9	.....	.....	10s	.....	W	0.01	0.3	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.73	755.1	30.12	765.0	47	8.3	92	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,075 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.16	766.1	44	6.7	76	S	3	1.3		0	Sm'e			0	0	Clear	
Alpena, Michigan	29.28	743.7	29.91	759.7	51	10.6	65	S	6	2.7		0	0			0	0	Clear	
Atlanta, Georgia	29.02	737.1	30.18	766.6	49	9.4	71	NE	5	2.2		2c	2s	S	SE	0	0	Fair	
Atlantic City, New Jersey	30.23	767.8	30.24	768.1	52	11.1	79	SW	12	5.4		0	0			0	0	Clear	
Augusta, Georgia	30.03	762.3	30.24	768.1	56	13.3	63	Calm	0	0			10s		SE	0	0	Cloudy	
Baltimore, Maryland	30.21	767.3	30.26	768.6	45	7.2	76	W	1	0.4			Fog		Calm	0	0	Foggy	
Barnegat, New Jersey	30.22	767.6	30.24	768.1	50	10.0	79	W	8	3.6		0	0			0	0	Clear	
Bismarck, Dakota	28.11	714.0	29.97	761.2	31	—0.6	80	NW	28	12.5			10s		NW	0.02	0.5	Cloudy	
Boerne, Texas	28.41	721.6			66	18.9	69	S	6	2.7		2k	0	S		0	0	Clear	
Boise City, Idaho	27.69	701.0	30.56	776.2	31	— 0.6	74	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	51.5	10.8	53	W	8	3.6		1cs	Haze	Calm	Calm	0	0	Clear	
Brackettville, Texas	28.70	729.0	29.71	754.6	60	15.6	82	E	5	2.2		0	0			0	0	Clear	
Breckenridge, Minnesota	28.80	731.5	29.81	757.2	32	0.0	69	NW	25	11.2		2k	0	NW		0	0	Fair	
Brownsville, Texas	29.84	757.9	29.90	759.4	71	21.7	85	SE	4	1.8		0	0			0	0	Clear	
Buffalo, New York	29.44	747.8	30.14	765.5	52	11.1	66	S	7	3.1		0	0			0	0	Clear	
Burkes, Arizona					57	13.9	29	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.87	758.7	30.14	765.5	49	9.4	71	Calm	0	0		0	Haze		Calm	0.01	0.3	Clear	
Cairo, Illinois	29.56	750.8	29.95	760.7	53	11.7	67	S	16	7.2		0	0			0	0	Clear	
Camp Apache, Arizona	24.71	627.6	29.71	754.6	35	1.7	52	NW			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.10	637.5	29.90	759.4	61	16.1	12	NW			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.96	684.8	30.45	773.4	45	7.2	46	N			1	0	0			0	0	Clear	
Campo, California	27.48	698.0	30.05	763.3	36	2.2	61	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.30	769.6	30.31	769.9	63	11.7	66	Calm	0	0		2c	0	SW		0	0	Fair	
Cape Henry, Virginia	30.25	768.3	30.28	769.1	48	8.9	85	SE	8	3.6		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.26	768.6	30.28	769.1	63	17.2	62	E	13	5.8		5c	0	W		0	0	Fair	
Cape May, New Jersey	30.23	767.8	30.26	768.6	55	12.8	74	SW	13	5.8		0	0			0	0	Clear	
Castroville, Texas	29.07	738.4	29.76	755.9	69	15.0	94	Calm	0	0		2ck	0	NW		0	0	Fair	
Charleston, South Carolina	30.16	766.1	30.23	767.8	64	17.8	83	NE	12	5.4		0	2s		S	0	0	Fair	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	27	— 2.8	76	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.16	740.7	29.84	757.9	50	10.0	52	S	10	4.5		0	0			0	0	Clear	
Cincinnati Ohio	29.49	749.0	30.16	766.1	46	7.8	80	SE	3	1.3		0	Fog		Calm	0	0	Clear	
Cleveland, Ohio	29.41	747.0	30.15	765.8	44	6.7	76	SE	10	4.5		0	0			0	0	Clear	
Coleman City, Texas	28.12	714.2	29.77	756.1	66	13.3	35	N	14	6.3		0	Sm'e			0	0	Smoky	
Columbus, Ohio	29.30	744.2	30.17	766.3	42	5.6	83	S	2	0.9			Fog		Calm	0	0	Foggy	
Conchо, Texas	28.03	711.9	29.70	754.4	54	12.2	60	NW	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.38	746.2	29.83	757.7	66	18.9	84	SW	12	5.4			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.16	740.7	29.78	756.4	54	12.2	61	S	10	4.5		9k	0	S		0	0	Cloudy	
Decatur, Texas	28.65	727.7	29.79	756.7	58	14.4	42	NW	12	5.4			10s			0	0	Cloudy	
Denison, Texas	28.94	735.1	29.72	754.9	63	17.2	89	S	16	7.2		10k	0	SW		0	0	Cloudy	
Denver, Colorado	24.92	633.0	30.14	765.5	37	2.8	16	W	12	5.4		0	0			0	0	Clear	
Des Moines, Iowa	28.85	732.8	29.71	754.6	51	10.6	65	NW	8	3.6			10s		Calm	0	0	Cloudy	
Detroit, Michigan	29.38	746.2	30.04	763.0	49	9.4	71	SW	5	2.2		0	0			0	0	Clear	
Dodge City, Kansas	27.40	696.0	29.70	754.4	45	7.2	46	N	24	10.7		2c	2s	W	N	0	0	Fair	
Dubuque, Iowa	29.04	737.6	29.73	755.1	50	10.0	65	S	5	2.2		2k	8s	S	Calm	0	0	Cloudy	
Duluth, Minnesota	28.95	735.3	29.61	752.1	48	8.9	78	NW	16	7.2			10s		NW	0	0	Cloudy	
Eagle Pass, Texas	29.01	736.8	29.74	755.4	57	13.9	87	SE	4	1.8		0	1s		Calm	0	0	Fair	
Eastport, Maine	29.77	756.1	29.84	757.9	47	8.3	77	W	9	4.0		8c;ck	0	S;NW		0.12	3.0	Fair	
Edinburg, Texas					63	17.2	89	S			6	0	0			0	0	Clear	
El Paso, Texas					66	18.9	26	W			2	0	0			0	0	Clear	
Erie, Pennsylvania	29.43	747.5	30.15	765.8	49	9.4	64	S	9	4.0		0	0			0	0	Clear	
Escanaba, Michigan	29.13	739.9	29.77	756.1	51	10.6	79	S	17	7.6		0	0			0	0	Clear	
Florence, Arizona	28.51	724.1	30.11	764.8	55	12.8	39	NW			1	0	0			0	0	Clear	
Fort Craig, New Mexico	25.60	650.2	29.66	753.4	50	10.0	7	S	28	12.5		0	0			0	0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765.3	68	20.0	15	N	14	6.3		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.18	741.2	29.69	754.1	63	17.2	78	S	10	4.5			10s		S	0	0	Cloudy	
Fort Griffin, Texas	28.64	727.4	29.89	759.2	60	15.6	20	N	16	7.2		0	0			0	0	Clear	
Fort McKavett, Texas	27.81	706.4	29.71	754.6	59	15.0	18	N	5	2.2		0	Haze			0	0	Hazy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.61	726.7	29.69	754.1	58	14.4	42	NW	20	8.9		0	0			0	0	Clear	
Fredericksburg, Texas	28.17	715.5	29.68	753.9	70	21.1	53	N	3	1.3			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.86	758.4	29.90	759.4	74	23.3	63	S	10	4.5		2c	5ks	Calm	S	0	0	Cloudy	
Graham, Texas	28.77	730.7	29.79	756.7	61	16.1	31	NW	10	4.5		0	0			0	0	Clear	
Grand Haven, Michigan	29.26	743.2	29.90	759.4	51	10.6	72	S	10	4.5		0	0			0	0	Clear	
Indianapolis, Indiana	29.26	743.2	30.04	763.0	49	9.4	64	SE	6	2.7		0	0			0	0	Clear	
Indianola, Texas	29.85	758.2	29.87	758.7	73	22.8	72	S	24	10.7		1ck	0	NW		0	0	Clear	
Jacksboro, Texas	28.70	729.0	29.81	757.2	58	14.4	37	N	14	6.3		0	0			0	0	Clear	
Jacksonville, Florida	30.04	763.0	30.06	763.5	72	22.2	90	NE	8	3.6		8k	0	NE		0	0	Cloudy	
Keokuk, Iowa	29.11	739.4	29.71	754.6	57	13.9	58	S	12	5.4			10s		S	0	0	Threatening	
Key West, Florida	29.67	753.6	29.70	754.4	73	22.8	95	NE	46	20.6			10n		NE	3.55	90.2	Heavy rain	
Kittyhawk, North Carolina	30.29	769.4	30.31	769.9	52	11.1	93	SW	4	1.8		0	0			0	0	Clear	
Knoxville, Tennessee	29.21	741.9	30.26	768.6	37	2.8	90	Calm	0	0		0	Fog		E	0	0	Clear	
La Crosse, Wisconsin	28.94	735.1	29.66	753.4	53	11.7	73	S	8	3.6		10ck	0	S		0	0	Cloudy	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	42	5.6	42	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.39	746.5	29.72	754.9	64	17.8	78	S	3	1.3		0	0			0	0	Clear	
Lead City, Dakota	24.83	630.7	30.10	764.5	31	— 0.6	79	NW	14	6.3			10s		NW	0.10	2.5	Cloudy	
Leavenworth, Kansas	28.90	734.0	29.72	754.9	55	12.8	56	N	8	3.6			10ks		N	0	0	Cloudy	
Los Angeles, California	29.63	752.6	29.97	761.2	51	10.6	72	NE	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.53	750.0	30.10	764.5	48	8.9	63	SE	6	2.7		0	Sm'e		SE	0	0	Smoky	
Lynchburg, Virginia	29.56	750.8	30.27	768.8	40	4.4	72	Calm	0	0		0	0			0	0	Clear	
Madison, Wisconsin	28.78	731.0	29.74	755.4	48	8.9	78	S	10	4.5		1k	0	S		0	0	Clear	
Marquette, Michigan	29.00	736.6	29.68	753.9	50	10.0	72	SE	12	5.4		0	0			0	0	Clear	
Mason, Texas	28.25	717.5	29.98	761.5	59	15.0	87	NW	2	0.9		0	0			0	0	Clear	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.08	738.6	29.80	756.9	49	9.4	64	S	8	3.6		0	2s;sm'e		Calm	0	0	Fair	
Mobile, Alabama	30.04	763.0	30.08	764.0	53	11.7	93	SW	6	2.7		0	8s		S	0	0	Fair	
Montgomery, Alabama	29.91	759.7	30.15	765.8	53	11.7	79	NE	2	0.9		5k	0	Calm		0	0	Fair	
Morgantown, West Virginia	29.14	740.1	30.24	768.1	37	2.8	81	SW	1	0.4			Fog		Calm	0	0	Foggy	
Mt. Washington, N. H.	23.68	601.5	30.04	763.0	28	— 2.2	100	NW	66	29.5			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.58	751.3	30.11	764.8	48	8.9	78	Calm	0	0			Sm'e		Calm	0	0	Smoky	
New Haven, Connecticut	30.08	764.0	30.20	767.1	51	10.6	68	SW	2	0.9		0	Haze		Calm	0	0	Clear	
New London, Connecticut	30.13	765.3	30.18	766.6	53	11.7	54	Calm	0	0		1cs	2s;hz	NW	Calm	0	0	Fair	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	62	16.7	88	NE	6	2.7		0	Haze		Calm	0	0	Clear	
Newport, Rhode Island	30.11	764.8	30.16	766.1	54	12.2	61	SW	6	2.7		1k	0			0	0	Clear	
New York, New York	30.04	763.0	30.23	767.8	49	9.4	71	SW	10	4.5		1cs	0	Calm		0	0	Clear	
Norfolk, Virginia	30.26	768.6	30.32	770.1	47	8.3	92	S	1	0.4		Haze	Sm'e			0	0	Smoky	
North Platte, Nebraska	27.12	688.8	29.78	756.4	31	—0.6	69	NW	12	5.4		0	Haze		Calm	0	0	Clear	
Olympia, Washington Ter.	30.31	769.9	30.35	770.9	45	7.2	92	S	5	2.2			10s		S	0	0	Threatening	
Omaha, Nebraska	28.74	730.0	29.81	757.2	45	7.2	92	N	10	4.5			10n		Calm	0.05	1.3	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	29.85	758.2	30.18	766.6	48	8.9	78	S	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Pembina, Dakota	28.76	730.5	29.60	751.8	31	— 0.6	91	NW	16	7.2	.....	.....	10n	.....	Calm	0.06	1.5	Light snow	
Philadelphia, Pa	30.21	767.3	30.26	768.6	48	8.9	78	SW	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.85	732.8	.....	.....	59	15.0	88	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.01	447.1	29.82	757.4	— 2	—18.9	85	N	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.30	617.2	30.07	763.8	28.5	— 1.9	64	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.39	746.5	30.23	767.8	37	2.8	90	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.39	746.5	30.05	763.3	48	8.9	70	S	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	29.95	760.7	30.00	762.0	52	11.1	66	W	4	1.8	.....	5k	0	W	.....	0	0	Fair	
Portland, Oregon	30.39	771.6	30.50	774.7	44.5	6.9	96	S	4	1.8	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Prescott, Arizona	24.90	632.4	30.26	768.6	39	3.9	31	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Punta Rassa, Florida	29.87	758.7	29.89	759.2	72	22.2	55	NE	18	8.0	.....	.....	10n	.....	NE	0.03	0.8	Light rain	
Red Bluff, California	29.89	759.2	30.25	768.3	60	15.6	24	N	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.69	754.1	29.90	759.4	68	20.0	65	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.53	750.0	30.15	765.8	48	8.9	70	SW	11	4.9	.....	0	Haze	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.94	760.5	30.55	776.0	37.0	2.8	100	Calm	0	0	.....	0	Fog	.....	Calm	0.02	0.5	Foggy	
Sacramento, California	30.08	764.0	30.17	766.3	53	11.7	42	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.29	744.0	29.86	758.4	53	11.7	61	S	22	9.8	.....	0	5s	.....	.....	0	0	Fair	
St. Marks, Florida	30.07	763.8	30.08	764.0	62	16.7	88	NE	10	4.5	.....	8ck	2s	SE	Calm	0	0	Cloudy	
St. Paul, Minnesota	28.84	732.5	29.64	752.8	51	10.6	53	NW	10	4.5	.....	10cs	0	Calm	.....	0	0	Cloudy	
Salt Lake City, Utah	25.99	660.1	30.32	770.1	34.0	1.1	52	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.17	740.9	29.74	755.4	63	17.2	89	SW	2	0.9	.....	5ck	0	SW	.....	0	0	Fair	
San Diego, California	29.94	760.5	30.01	762.2	60	10.0	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.43	747.5	30.11	764.8	48	8.9	63	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.19	766.8	30.22	767.6	55	12.8	56	W	14	6.3	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	30.08	764.0	30.15	765.8	57	13.9	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	33	0.6	82	NW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.08	764.0	30.17	766.3	63	17.2	83	NE	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.68	753.9	29.90	759.4	69	15.0	82	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Silver City, New Mexico	24.29	617.0	.....	.....	46	9.4	31	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.24	768.1	30.28	769.1	62	16.7	83	N	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Springfield, Massachusetts	30.04	763.0	30.17	766.3	51	10.6	59	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.98	685.3	29.98	761.5	52	11.1	59	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	54	12.2	55	W	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.37	746.0	30.05	763.3	50	10.0	65	SE	6	2.7	.....	1k	0	Calm	.....	0	0	Clear	
Tucson, Arizona	.....	.....	.....	.....	67	19.4	31	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.15	765.8	67	19.4	84	E	24	10.7	.....	0	0	.....	.....	0	0	Fair	
Umatilla, Oregon	30.08	764.0	.....	.....	45.0	7.2	68	E	8	1.3	.....	2ck	2ks	S	E	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	W	.....	.....	2	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	28.96	735.6	29.77	756.1	58	14.4	82	NE	6	2.2	.....	5ck	10ks	.....	W	0.20	5.1	Cloudy	
Vicksburg, Mississippi	29.80	756.9	30.07	763.8	60	10.0	86	SE	12	5.4	.....	0	0	.....	W	0	0	Fair	
Virginia City, Montana	24.49	622.0	29.97	761.2	23	— 5.0	60	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.84	757.9	30.23	767.8	45	7.2	85	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.15	765.8	30.27	768.8	42	5.6	91	Calm	0	0	.....	0	Fog	.....	S	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	48	8.9	36	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.19	766.8	30.27	768.8	52	11.1	86	NE	4	1.8	.....	5k	0	NE	.....	0	0	Fair	
Winnemucca, Nevada	26.05	661.7	30.41	772.4	23	— 5.0	78	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.07	763.8	30.12	765.0	58	14.4	53	NW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.60	726.4	29.88	758.9	46	7.8	47	NW	18	8.0	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.79	756.7	29.95	760.7	75	23.9	19	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	9.5	—12.5	100	N	9	4.0	.....	.....	10n	.....	N	0.55	14.0	Snowing	J. Fortescue, W. Wood,
York Factory, B. A	29.81	757.2	29.86	758.4	75	23.9	90	N	34.8	15.6	.....	.....	10n	.....	N	0.99	25.1	Threatening	Chas. Hasselbrink.
Havana, Cuba, W. I	29.61	752.1	29.63	752.6	82	27.8	52	SE	.....	.....	4	8ck	8n	.....	SE	Blank	Blank	.....	Robert Mason.
Santiago de Cuba, W. I	29.88	758.9	29.90	759.4	82	27.8	83	E	3	1.3	.....	5c	2ks	NE	.....	0.22	5.6	Clear	G. O. Gellich.
St. Thomas, W. I	.....	.....	.....	.....	85	29.4	83	E	10	4.5	.....	10c	8n	N	S	1.08	27.4	.....	James Gall.
Kingston, Jamaica, W. I	30.06	763.5	30.07	763.8	81	27.2	91	E	15.4	6.9	.....	.....	.....	.....	.....	0.54	13.7	Cloudy	F. M. Everett.
Navassa, W. I	29.84	757.9	29.92	760.0	81	27.2	.....	E	.....	.....	2	5k	6ks	E	.....	0	0	Fair	O. J. Hering
Paramaribo, D. Guiana, S. A	29.95	760.7	29.96	761.0	84	28.9	75	Calm	0	0	.....	.....	10n	.....	.....	0.25	6.3	.....	Thomas Herran.
Medellin, Colombia, S. A	25.25	641.3	.....	.....	66.0	18.9	80	E	.....	.....	.....	k	.....	.....	.....	.....	.....	.....	Robert Elworthy.
Portland, Jamaica, W. I	29.70	754.4	30.01	762.2	75	23.9	95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 ?) ft., or 335.5 (?) m.; Florence, 1,560 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 6,080 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 ?) ft., or 944.9 (?) m.: Tucson, 2,645 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.15	765.8	63.5	17.5	63	17.2	86	NE	4	1.8	.....	.....	5	.....	S	0	0	.....	.....	Fair	
NavyYard,Portsmouth,N.H	30.02‡	762.5‡	.....	.....	51	10.6	65	W	2	0.9	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Naval Hospital, Yokohama, Japan	30.17*	766.3*	64.5	18.1	60	15.6	82	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Clear	
Adams. Valparaiso, Chili	30.24	768 1	65	18.3	59	15.0	82	SSE	.....	.....	2	.....	2	.....	S	.....	.....	Smooth	.....	Fair	
Alaska. Callao, Peru	30.28	769.1	69	20.6	64	17.8	89	S	.....	.....	1	.....	10	.....	.....	0	0	Smooth	.....	Misty	
Alliance, Smyrna, Turkey	29.99‡	761.7‡	.....	.....	74	23.3	59	W	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Hazy	
Ashuelot. Nagasaki, Japan	30.06	763.5	73	22.8	71	21.7	80	NNE	.....	.....	2	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
Canonicus, New Orleans, La	30.02	762.5	47	8.3	62	16.7	88	E	.....	.....	1	.....	0	.....	.....	.....	.....	...	.....	Clear	
Colorado New York, N. Y	30.22‡	767.6‡	.....	.....	52	11.1	66	SW	8	3.6	.....	.....	2	.....	NW	0	0	.....	.....	Hazy	
Constitution, Havre, France	.....	.....	.....	.....	58	14.4	100	ENE	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Rainy	
Despatch. Constantinople, Turkey	30.00‡	762.0‡	.....	.....	78	25.6	65	SW	.....	.....	0-1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, Cape Town	29.93	760.2	64	17.8	67	19.4	89	WSW	.....	.....	3	.....	5	.....	W	.....	.....	.....	.....	Fair	
Franklin, Norfolk, Va	30.40	772.1	71	21.7	51	10.6	86	SW	6	2.7	.....	.....	2	.....	SW	0	0	.....	.....	Clear	
Gettysburg Port Said, Egypt	29.95‡	760.7‡	.....	.....	84	28.9	100	NNW	.....	.....	2	.....	2	.....	.....	0	0	Smooth	NE	D. clouds	
Guard. N 9° 11', W. 41° 32'	29.96	761.0	80	26.7	78	25.6	95	ESE	....	.....	3	.....	8	.....	SE	.....	.....	Mod'ate	SE	Cloudy	
Hartford, S. 27° 16' W. 48° 25'	29.79	756.0*	73	22.8	67	19.4	89	S	18.0	8.0	.....	.....	10	.....	S	0	0	Smooth	.....	Cloudy	
Marion, Trieste, Austria	29.95	760.7	66	18.9	65	18.3	84	Calm	.....	.....	0	.....	10	.....	S	Light	Light	.....	.....	Sprinkling	
Michigan, Erie, Pa	30.05†	763.3†	.....	.....	46	7.8	77	S	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy. Yokohama, Japan	30.20‡	767.1‡	.....	.....	63	17.2	72	NE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
New Hampshire, Port Royal, S. C	30.21	767.3	67	19.4	67	19.4	79	N	19	8.5	.....	.....	2	.....	ESE	0	0	.....	.....	Fair	
Onward, Callao, Peru	30.12†	765.0†	.....	.....	64	17.8	83	S	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty	
Palos, Tientsin, China	30.07	763.8	65	18.3	55	12.8	93	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....	Misty	
Passaic, Washington, D. C	.....	.....	.....	.....	42	5.6	83	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. Santa Cruz	30.13	765.3	84	28.9	85	29.4	79	ENE	.....	.....	3	.....	10?	.....	N;E	.....	.....	.....	E	Clear?	
Powhatan, Boston, Mass	30.08‡	764.0‡	.....	.....	53	11.7	54	WNW	9.6	4.3	.....	.....	5	.....	.....	0	0	.....	.....	Fair	
Quinnebaug, Norfolk, Va	30.25‡?	768.3‡?	.....	.....	52	11.1	86	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China	30.01	762.2	80	26.7	79	26.1	91	E	.....	.....	2-3	.....	5	.....	Calm	.....	.....	.....	.....	Fair	
Rio Bravo, Brownsville, Texas	29.83	757.7	68	20.0	68	20.0	95	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Sarnee. Annapolis, Md	30.23‡	767.8‡	.....	.....	51	10.6	72	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Saratoga, Philadelphia, Pa	30.09	764.3	.....	.....	46	7.8	100	SW	.....	.....	3	.....	.....	.....	.....	0	0	.....	.....	Misty	
St. Louis, League Island, Pa	30.11	764.8	60	15.6	53	11.7	79	SW	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Supply, Havre, France	29.53	750.0	61	16.1	60	15.6	100	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	... ...	.....	Drizzling	
Swatara, Boston, Mass	30.09‡	764.3‡	.....	.....	53	11.7	61	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
Trenton, Villafranca, France	29.90‡	759.4‡	.....	.....	69	20.6	85	WSW	.....	.....	0-1	.....	8	.....	W	0.4	10.	.....	.....	Cloudy	
Vandalia, Port Mahon, Minorca Id., Baleric Ids.	29.84‡	757.9‡	.....	.....	77	25.0	65	SW	.....	.....	2	.....	2	.....	SW	.....	.....	.....	.....	Clear	
Wabash, Boston, Mass	.....	.....	.....	.....	53	11.7	48	WSW	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, Yokohama, Japan		30.24*	768.1*	59	15.0	100	ENE			8		6		NE				D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 23° 12′, W. 106° 23′		29.94*	760.5*	83	28.3	91	N			1		3		Calm	0	Mod'ate	SW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 43° 31′, W. 124° 48′		30.39*	771.9*	56	13.3	94	N			1		1		N	0	Mod'ate	NW	Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic, N. 51° 34′, W. 8° 28′		29.25*	742.9*	56	13.3	??	SW			5		10				Mod'ate	W	Drizzling	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 41° 50′, W. 69° 40′		29.99†	761.7†	64	17.8		WSW			6		5k		WSW	0	High	wsw	Fair	Capt. W. H. Thompson.
S. S. Celtic, New York, N. Y.		30.05*	763.3*	55	12.8	??	NW			6				NW	0			D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 41° 28′, W. 56° 56′		29.96	761.0	64.0	17.8	60	WNW			5–6		4		W	0	5–6	wsw	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.21*	767.3*	65	18.3	100	Calm			0		0			0			Foggy	Captain Sargent.
S. S. Ohio, Liverpool		29.27	743.4	56	13.3	94	SSW			2		10		SSW	0			Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 48° 02′ W. 34° 43′		29.93*	760.2*				WNW	30	13.4			6		WNW		Heavy	W	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Porto Cabello, Venezuela		29.87	758.7	83	28.3	75	Calm	0	0			8ck		Calm	0			Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 22, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.03	762.8	75.0	23.9	75	NW	.....	.....	3	.....	3	.....	.....	0.047	1.2	Pretty fair..	Kesxuche.
Algiers	.....	.....	29.95	760.8	77.7	25.4	53	WSW	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Touriliere.
La Calle	.....	.....	29.97	761.2	71.2	21.8	83	SSW	.....	.....	5	.....	9	.....	.....	0	0	Covered.....	Foufrede.
Tunis	.....	.....	29.97	761.2	78.8	26.0	54	WSW	.....	.....	3	.....	10	.....	.....	0	0	Covered.....	Jacques.
Sfax	.....	.....	30.05	763.2	82.4	28.0	.....	W	.....	.....	3	.....	9	.....	.....	0	0	Covered.....	Gau.
Saida	.....	.....	30.04	763.0	67.6	19.8	54	W	.....	.....	1	.....	6	.....	.....	0	0	Cloudy.....	Herbin.
Tebessa	.....	.....	29.99	761.7	75.6	24.2	33	W	.....	.....	6	.....	7	.....	.....	Inap.	Inap.	Very cloudy	Watrin.
Geriville	.....	.....	30.06	763.5	67.6	19.8	36	E	.....	.....	6	.....	9	.....	.....	0.709	18.0	Covered.....	Brugniaux.
Laghouat	.....	.....	30.04	763.1	69.1	20.6	76	NE	.....	.....	6	.....	3	.....	.....	0.657	16.7	Pretty fair..	Bertrand.
Biskra	.....	.....	30.02	762.5	89.6	32.0	55	NW	.....	.....	1	.....	8	.....	.....	0.039	1.0	Very cloudy	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.19	741.4	29.72	754.8	69.4	20.8	61	SW	.....	.....	5	.....	7	.....	.....	0.425	10.8	Thunder-storm..	Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.93	734.7	29.67	753.5	65.5	18.6	66	SW	.....	.....	1	.....	3	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	28.92	734.5	29.78	756.3	60.1	15.6	89	S	.....	.....	2	.....	9cs;s	.....	N	0.014	0.35	.....	Julius Mikolik.
Gratz	28.45	722.6	29.66	753.4	63.9	17.7	78	S	.....	.....	2	.....	7	.....	.....	0	0	.....	Andreas Rospini.
Hermannstadt	28.41	721.7	29.82	757.3	66.9	19.4	64	SE	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.29	718.5	29.60	751.9	54.5	12.5	90	WSW	.....	.....	1	.....	8	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.78	730.9	29.74	755.3	61.2	16.2	77	SE	.....	.....	2	.....	8	.....	.....	0.061	1.3	.....	Dr. T. Stanecki.
Pola	29.62	752.3	29.72	755.0	66.2	19.0	95	SE	.....	.....	5	.....	10s	.....	.....	0.122	3.1	.....	I.R.Hydrographic Office.
Szathmar	29.40	746.8	29.85	758.2	69.4	20.8	67	S	.....	.....	2	.....	6	.....	.....	0.461	11.7	.....	Julius Csics, S. J.
Szegedin	29.53	750.0	29.80	756.9	64.4	18.0	82	S	.....	.....	2	.....	8	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.66	753.4	29.76	756.0	64.6	18.1	86	S	.....	.....	1	.....	10	.....	.....	0.906	23.0	Rainy.....	P. Busin.
Vienna	28.94	735.1	29.64	752.9	58.6	14.8	91	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.079	2.0	.....	Prof. M. Passau.
Brussels	29.11	739.5	29.91	744.4	60.4	15.8	80	SW	.....	.....	5	3	7	SSW	SW	0.425	10.80	.....	Royal Observatory
Furnes	29.32	744.6	29.34	745.2	50.5	10.3	94	WSW	.....	.....	2	.....	10	.....	.....	0.322	8.2	Raining.....	M. E. de Cae
Maeseyck	29.26	743.1	29.39	746.4	50.0	15.0	100?	SSW	.....	.....	4	.....	10	.....	.....	0.496	12.6	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

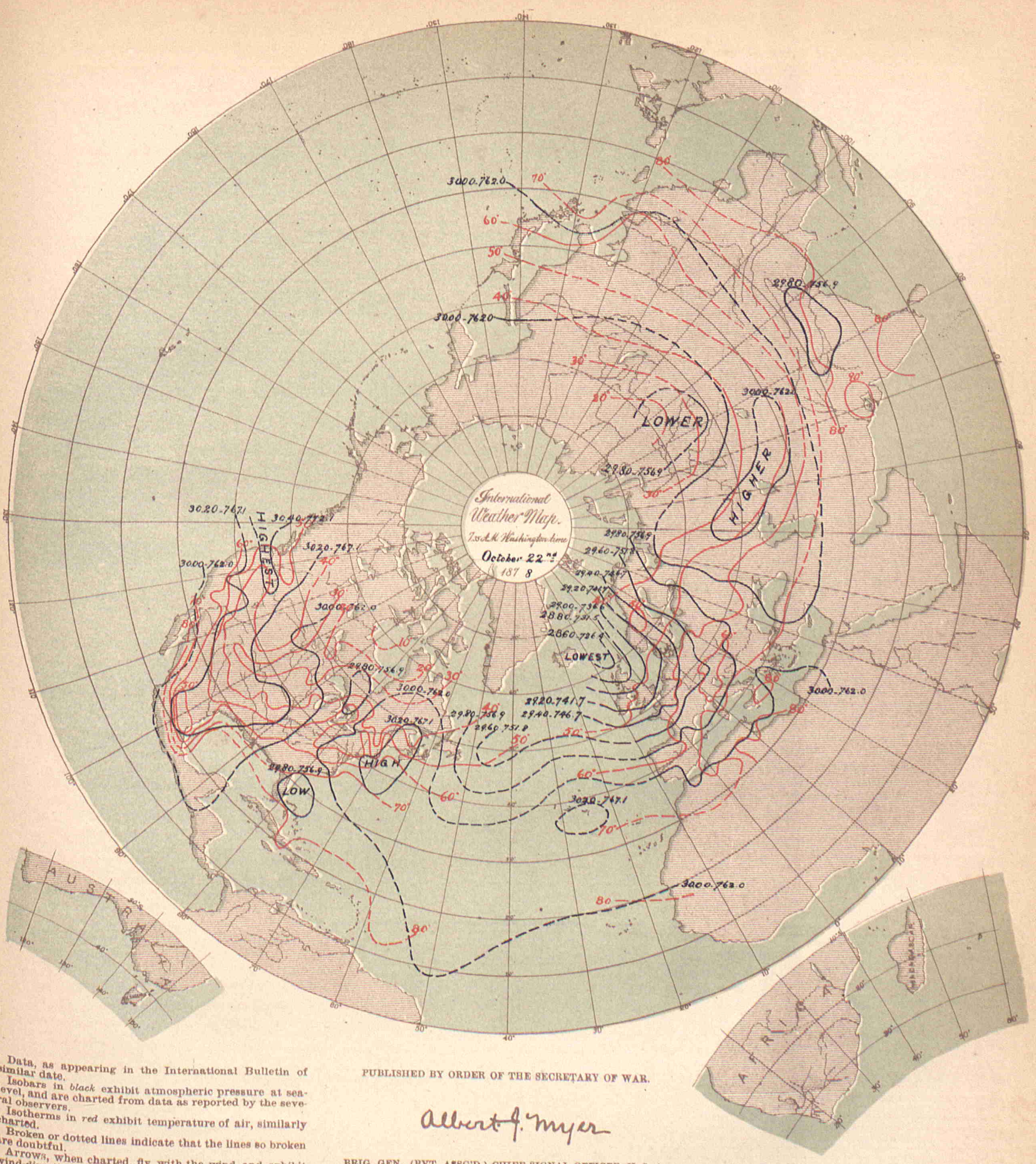
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.75	730.2	28.84	732.5	47.7	8.7		S	24	10.7			4			0	0	Blue sky	W. Boswell.
Ardrossan	28.92	734.6	28.94	735.1	50	10.0		WSW			1 4		6					Showery	George Carrick.
Armagh, Observatory			29.09	738.9	48.2	9.0		WSW	11	4.9			8					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.11	739.4	51.6	10.9		WSW	24	10.7			3					Blue sky	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.72	729.5	29.11	739.4	50 7	10.4		W			3		8			0.52	13.2	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	76.0	24.4		NE			2		8					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.23	742.4	57.1	13.9		SW			2		5					D. clouds	H. Todd. [H. C.
Cardington			29.23	742.4	55.0	12.8		SW			1		1					Blue sky	John McLaren.
Chatham, School M. E	29.15	740.4	29.28	743.7	53.2	11.8		SW			2		9			Blank	Blank	Overcast	Lt. G. W. Morris, R. E.
Dartmoor	27.93	709.4	29.39	746.5	46.0	7.8		W			4		9					Showery	Alexander Watt.
Donaghadee	29.00	736.6	29.03	737.3	48	8.9		W			4		5					D. clouds	J. Mac Gowan.
Dover	29.26	743.2	29.28	743.7	53	11.7		WSW			3		7					¾ clouded	J. Costello.
Falmouth, Observatory	29.12	739.6	29.34	745.2	50.2	10.1		SW			4		3					D. clouds	The Staff.
Fort Napier, (Natal)	27.27	692.6	29.59	751.6	88.0	31.1		N			2		9					Overcast	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	85	29.4		W			1		4					D. clouds	
Galway, Queen's College			29.16	740.7	50	10.0		WNW			4		8					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.90	759.4	29.96	761.0				W			3		4					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	28.73	729.7	28.93	734.8	49.7	9.8		WSW			7		4					D. clouds	D. G. Maclean.
Great Yarmouth	29.23	742.4	29.24	742.7	52	11.1		WSW			2		6					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.11	739.4	29.27	743.4	53.4	11.9		WSW			1		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.16	740.7	29.38	746.2	55	12.8		WSW			5		5					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			29.35	745.5	54	12.2		SW			1		c			0	0	Fine	M. P. Moyle.
Holyhead	29.10	739.1	29.15	740.4	52	11.1		W			5		8					D. clouds	John Tilston.
Jersey	29.11	739.4	29.40	746.7	54.2	12.3		W			6		7			Blank	Blank	Squally	J. Fisher.
Kew, Observatory	29.24	742.7	29.28	743.7	53.0	11.7		WSW	9	4.0			6					D. clouds	The Staff.
Kingstown	29.12	739.6	29.15	740.4	51	10.6		W			4		5					D. clouds	George Mitchell.
Leicester, Museum			29.26	743.2	53.9	12.2		SW			2		4					D. clouds	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.88	758.9	29.95	760.7	79	26.1		SW			2		8ks					Overcast	Sergt. Beckett.
Nairn	28.66	728.0	28.75	730.2	47	8.3		SW			1		5					⅛ clouded	W. D. Penny.
Nassau, (Bahamas)			29.80	756.9	76.5	24.7		SW			3		10					Drizzling	C. S. Duncombe.
Nottingham, Observatory	28.99	736.3	29.18	741.2	55.8	13.2		SW			5		2k;d		WSW	0.431	10.95	Blue sky	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.66	728.0	29.17	740.9	54.5	12.5		SW			5		3					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.26	743.2	50	10.0		W			3		10					Threatening	H. E. Bellamy.
Plymouth	29.24	742.7	29.31	744.5	53.4	11.9		SW			3		6					D. clouds	John Merrifield.
Roche's Point	29.20	741.7	29.25	742.9	53	11.7		W			5		8					Squally	W. Kennedy.
Saint Ann's Head	29.04	737.6	29.20	741.7	53	11.7		W			6		3					Squally	John C. Walker.
Sandwick Manse, (Orkneys)			28.74	730.0	46.2	7.9		S	23	10.3			7					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)																			Sergt. W. H. Lyne.
Sheffield	28.87	733.3	29.14	740.1	52.2	11.2		SW			4		6			0.07	1.8	D. clouds	W. F. Cooper.
Silloth, Rectory	28.98	736.1	29.01	736.8	51.6	10.9	83	SW			6		4			0.360	9.14	D. clouds	C. Edith Redford.
Stonyhurst Observatory	28.72	729.5	29.13	739.9	46.2	7.9		SW			3		10					Thunder-storm	Rev. S. J. Perry.
Strathfeld Turgiss	29.05	737.9	29.28	743.7	55.0	12.8		W			1		3					Blue sky	Rev. C. H. Griffin, F. M. S.
Thurso	28 01	726.7	28.67	728.2	47	8.3		SSW			3		9					Overcast	John Trotter.
Truro, Royal Institution			29.34	745.2	56	13.3		SW			6		8					Gloomy	W. Newcombe.
Valencia, Observatory	29.30	744.2	29.32	744.7	48.9	9.4		WNW	21	9.4			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.72	754.9	51.0	10.6	88	NW			2		10n			0.01	0.3	Covered	Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.60	762.0	78.0	25.6	59	NE	12.5	5.6		3	2		NE	0	0	Cloudy	C. Meldrum.
Melbourne, Observatory	29.95	760.7	30.04	763.0	58.2	14.6	83	Calm	0	0			3			0	0	Heavy dew	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 44° 40′, W. 44° 50′			29.63	752.6	54	12.2		SW			2		10			3		Overcast	Capt. Alex. Wilson.
Barque Commewyne, N. 23° 30′, W. 49° 50′			30.06	763.5	84	28.9		ENE			2		1			2	ENE	Blue sky	Capt. A. Buchan.
S. S. Gordon Castle N. 40° 15′, W. 66° 0′			30.20	767.1	67	19.4		NW			4		3			3	NNW	D. clouds	Capt. W. Waring.
Barque Margaret Smith, N. 22° 40′, W. 79° 10′			29.88	758.9	78	25.6					4		4	NNW			SE	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.25	666.7	29.97	761.2	67.6	19.8	98	Calm	.....	.....	0	10s	.....	.....	.....	0.3	7.6	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.34	745.1	29.38	746.3	57.4	14.1	93	S	.....	.....	4	9	.....	.....	.....	.....	.....	.....	.....
Fanöe	29.20	741.6	29.22	742.1	56.3	13.5	98	S	.....	.....	6	7	.....	.....	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farõe)	28.38	720.9	28.42	721.8	44.8	7.1	80	SSW	.....	.....	8	.....	10	.....	.....	.....	.....	Raining	.....
Vestervig	29.00	736.7	29.17	741.0	55.0	12.8	96	S	.....	.....	6	.....	10	.....	.....	.....	.....	Raining	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	28.94	735.0	29.49	749.0	53.6	12	97	SW	.....	.....	3	.....	10	.....	.....	0.465	11.9	Covered	Collignon, Director.
Amiens, Normal School	29.21	742.0	29.33	744.7	54.0	17.8	76	SW	.....	.....	3	.....	5	.....	NE	0.094	2.4	Cloudy	Bonvallet, Director.
Avignon, Normal School	29.07	738.5	29.74	755.5	68.7	20.4	64	ESE	.....	.....	1	.....	.....	.....	SW	0.008	0.2	Sprinkling	M. Giraud, Director.
Bar-sur-Seine	28.98	736.2	29.52	749.9	62.4	16.9	80	S	.....	.....	2	.....	10	.....	SW	0.079	2.	.....	C. Saillard.
Beauvais, Normal School	29.08	738.5	29.35	745.6	61.3	16 3	83	SW	.....	.....	2	.....	8	.....	WSW	0.39	10.	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.97	735.9	29.31	744.5	61.7	16.5	71	S	.....	.....	2	.....	10	.....	SW	2.17	55.	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	28.80	731.5	29.72	755.0	62.2	16.8	80	S	.....	.....	4	.....	5cn	.....	SW	0.12	3.	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.04	737.6	29.58	751.2	60.1	15.6	91	SW	.....	.....	1	.....	8k	.....	SW	0.071	1.80	Raining	A. Waquet, Director.
Brest, Naval Observatory	29.22	742.2	29.47	748.4	57.9	14.4	67	W	.....	.....	4	.....	2	.....	W	0.197	5.00	Squally	M. de Rermaur, Director.
Carcassonne, Normal School	29.43	747.5	29.84	758.0	62.6	17	70	W	.....	.....	2	.....	5	NW	NW	0	0	Cloudy	Septembre, Director.
Caen	29.34	745.1	29.41	747.0	54.7	12.6	81	SW	.....	.....	2	.....	8	.....	SW	0	0	Very cloudy	M. Lair, Director.
Chartres, Normal School	28.86	733.1	29.42	747.2	60.1	15.6	83	W	.....	.....	4	.....	10	.....	E	0.12	3.	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.17	740.9	29.48	748.8	58.3	14.6	91	SSW	.....	.....	4	.....	10n	.....	SW	0.020	0.5	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.31	719.1	29.68	752.5	62.6	17.0	61	SW	.....	.....	2	.....	10	W	SW	0.322	8.2	Covered	Alluard, Director.
Commercy, Normal School	28.72	729.5	29.58	751.2	59.7	15.4	85	SW	.....	.....	3	.....	kn	.....	SW	0.28	7.	.....	Dr. Coulet, Director.
Commune de Grèasque*	28.70	729.0	29.84	758.0	65.3	18.5	69	N	.....	.....	1	.....	8	W	.....	0	0	¾ Covered	M. Ablard, Director.
Grenoble, Normal School	28.92	734.6	29.68	753.8	59.4	15.2	83	NNE	.....	.....	1	.....	10n	.....	S	1.57	40.	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.36	745.7	29.57	751.1	58.3	14.6	93	W	.....	.....	2	.....	10	.....	.....	0.165	4.2	Raining	Mouillot, Director.
Le Mans, Normal School	29.18	741.1	29.48	748.7	58.6	14.8	63	W	.....	.....	4	.....	8	.....	W	0.256	6.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.76	730.6	29.66	753.3	61.2	16.2	85	S	.....	.....	3	.....	8	.....	S	0.47	12.	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	29.41	747.1	29.61	749.6	57.2	14.0	58	W	.....	.....	4	.....	.....	.....	W	0.177	4.5	.....	Lt T. Carré, Director.
Mâcon, Normal School	29.74	755.4	29.77	756.2	60.8	16	89	S	.....	.....	1	.....	5	.....	S	1.646	41.8	Cloudy	M. Galxin, Director
Mirecourt, Normal School	28.54	724.8	29.55	750.6	60.1	15.6	85	SSW	.....	.....	3	.....	10kn	.....	NNE	0.08	2.	Covered	M. Barbier, Director.
Nismes, Normal School	29.54	750.4	29.74	755.4	74.8	23.8	61	SW	.....	.....	1	.....	2	.....	W	0	0	Slightly cl'dy	Boyer, Director.
Orleans	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Privas, Normal School	28.66	728.0	29.70	754.3	64.4	18	74	NW	.....	.....	6	.....	5	NW	NW	4.214	107.	Cloudy	M. Cantier.
Puy de Dome (Summit)	24.88	631.9	.....	.....	43.0	6.1	100	W	.....	.....	6	.....	Fog	.....	.....	0.315	8.0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.58	751.3	29.61	752.1	61.9	16.6	84	W	.....	.....	4	.....	8	W	W	0.24	6.	¾ Covered	Lt. Decante, Director.
Rouen, Normal School	29.29	744.0	29.38	746.2	53.2	11.8	87	WNW	.....	.....	3	.....	10	.....	W	0.224	5.7	Covered	Frere Lucard, Director.
Saint Malo (Port)	.....	.....	29.43	747.4	54.7	12.6	71	WSW	.....	.....	3	.....	5	.....	W	0.297	7.55	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.24	742.7	29.40	746.7	62.2	16.8	82	SW	.....	.....	3	.....	10	W	SW	0 307	7.8	.....	E. Renou.
Tarbes, Normal School	28.78	731.1	29.84	758.0	60.8	16	89	WSW	.....	.....	2	.....	10	.....	.....	0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.04	737.7	29.74	755.3	64.6	18.1	80	W	.....	.....	1	.....	10	.....	NW	0.496	12.6	Covered	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.39	10.	.....	L'Abbé Marchési.
Lyons, Observatory	.....	.....	29.68	753.8	64.9	18.3	69	.....	.....	.....	.....	.....	10	.....	.....	0.539	13.7	.....	.....
Marseilles, Observatory	.....	.....	29.74	755.3	70.9	21.6	45	W	.....	.....	2	.....	7	.....	.....	0	0	Very cloudy	The Staff.
Mont-Louis	24.68	626.8	29.99	761.8	52.2	11.2	61	SW	.....	.....	3	.....	1	.....	SW	0.197	5.0	.....	M. Cave.
Nice	.....	.....	29.78	756.8	66.6	19.2	86	SW	.....	.....	1	.....	5	.....	.....	0.335	8.5	½ covered	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.11	739.5	29.39	746.5	62.8	17.1	79	SW	.....	.....	6	.....	9	.....	SW	0.087	2.2	.....	Marié Davy, Director
Perpignan	.....	.....	29.79	756.0	72.1	22.3	48	S	11.2	5.00	.....	.....	1	.....	NW	Inap.	Inap.	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.87	593.1	.....	.....	39.2	4.0	.....	W	.....	.....	3	.....	9	.....	.....	0.087	2.2	Cloudy	Gen'l de Sansouty
Toulouse, Observatory	29.09	738.8	29.80	757.0	66 2	19.0	59	NW	.....	.....	2	.....	7	.....	.....	0.128	3.25	.....	B. Baillaud.
Tours	29.28	743.7	29.48	748.7	63.7	17.6	76	SW	.....	.....	6	.....	10	.....	WSW	0	0	.....	C. Marquet.
Versailles	.....	.....	29.30	746.6	61.9	16.6	68	SW	.....	.....	3	.....	10	.....	.....	0.058	1.48	Light rain	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	29.98	761.4	30.00	762.0	57.9	14.4	100	NW	4.9	2.2	.....	.....	10n	.....	.....	0.102	2.6	Raining	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.74	730.0	29.57	751.1	59.7	15.4	85	S			3		4	SW		0.039	1.0	Raining	Prof. Dr. Hoh.
Berlin	29.37	746.0	29.54	750.2	61.7	16.5	73	S			2		8			0.020	0.5	Raining	Prof. Arndt.
Breslau	29.13	740.0	29.66	753.3	65.3	18.5	67	SSE			3		7			0	0		Royal University Ob'y
Carlsruhe	29.13	739.8	29.54	750.2	64.9	18.3	70	SW			4		5			0.232	5.9	Raining	Albert Senx.
Cassel	28.86	733.1	29.46	748.2	62.2	16.8	79	SSW			1		8	WSW		0.178	4.52	Foggy	Dr. H. Möhl.
Crefeld	29.20	741.7	29.36	745.7	63.3	17.4	72	SW			4		9			0.12	3.		Director Lose.
Emden	29.30	744.2	29.34	745.1	59.5	15.3	87	S			3		10			0	0		Prof. Prestel.
Frankfort on the Main	29.20	741.6	29.51	749.5	64.6	18.1		SSW			4		8			0.043	1.1		Physical Society.
Friedrichshafen	28.24	717.2	29.64	752.8	58.6	14.8	84	SW			1		9	SW		0.067	1.7		M. Wilhelm.
Hamburg	29.32	744.8	29.39	746.5	63.0	17.2	76	SSW			5		9km			0.020	0.5	Squally	Captain F. Hegemann.
Kiel	29.32	744.8	29.34	745.2	60.3	15.7	84	SSW			4		1			0	0		Prof. G. Karsten.
Königsberg, (Prussia)	29.55	750.6	29.63	752.7	58.1	14.5	86	E			3		2			0.004	0.01		Prof. E. Luther.
Kösiin			29.49	749.1	63.7	17.6		S			4		1			0	0		H. Müller.
Leipsic, Observatory	29.16	740.7	29.57	751.1	63.3	17.4	77	S			3		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.62	752.3	29.67	753.5	55.2	12.9	88	SSE			2		7cs						Reinbrecht and Skalweit.
Neufahrwasser	29.59	751.6	29.61	752.0	60.3	15.7	84	SSE			3		4			0	0	Dust-haze	A. Lothes.
Posen	29.37	745.9	29.65	753.1	63.7	17.6	70	SW			1		3			0	0		Dr. Magener.
Strassburg (in Alsace)	29.04	737.7	29.58	751.2	65.1	18.4	72	SW			2		9	SW		0.148	3.74		Astronomical Observatory.
Stuttgart	28.63	727.3	29.54	750.3	63.7	17.6	65	W			1		9	W		0.102	2.6	Light rain	Prof. Schoder.
Treves, (Trier)	28.95	735.2	29.46	748.3	64.0	17.8	66	W			6		5			0.551	14.0		Prof. Flesch.
Weissenburg, (Bavaria)	28.13	714.4	29.58	751.4	60.6	15.9	73	SSW	6.0	2.7			9ck		W	0.036	0.9		Dr. Von Bebber.
Wustrow, Naval School	29.41	747.0	29.43	747.6	61.7	16.5	78	S			5		10ks			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.6	29.97	761.2	78.6	25.9		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee								N					1	S		0	0	D. clouds	
Deesa	29.40	746.7	29.87	758.6	89.5	31.9	35	WSW	6	2.7			4	W	W	0	0	D. clouds	
Bombay	29.80	757.0	29.84	757.9	84.0	28.9	83	W					10		W	0	0	D. clouds	
Poona	27.84	707.1	29.84	757.8	79.3	26.3	84	Calm	1.1	0.5						0	0	Blue sky	
Lahore	29.10	739.0	29.84	757.9	81.0	27.2	27	N	3	1.3			10		NE	0.17	4.3	Thunder-storm	
Belgaum	27.38	694.2	29.87	758.8	75.1	23.9	91	NW	2	0.9						0	0		
Roorkee	28.90	733.9	29.80	756.8	78.8	26.0	33	N								0	0		
Agra	29.26	743.1	29.81	757.2	88.7	31.5	32	Calm	1.8	0.8			4			0.56	14.2		
Nagpur	28.79	731.2	29.83	757.6	80.6	27.0	81	Calm	1.3	0.6						0	0	Blue sky	
Lucknow	29.40	746.8	29.77	756.0	88.4	31.3	34	Calm	1.0	0.4			0			0	0	Blue sky	
Allahabad	29.46	748.4	29.77	756.2	84.1	28.9	46	Calm	2.3	1.0			0			0	0	Blue sky	
Patna	29.59	751.5	29.77	756.1	83.6	28.7	53	NW	4.4	2.0			0			0	0	Blue sky	
Hazaribagh	27.80	706.0	29.79	756.8	80.8	27.1	45	WNW	1.2	0.5						0	0	Blue sky	
Cuttack	29.74	755.5	29.82	757.5	84.0	28.9	72	N	1.0	0.4			0			0	0	Blue sky	
Calcutta (Alipore)	29.79	756.6	29.81	757.2	81.2	27.3	94	SW	1.6	0.7			0			0	0	Blue sky	
Goalpara	29.38	746.2	29.77	756.1	81.9	27.7	59	SSW					0			0	0	Blue sky	
Chittagong	29.75	755.7	29.84	758.0	80.1	26.7	87	Calm					2			0	0	Misty	
Sibsagar	29.47	748.5	29.80	757.0	76.7	24.8	76	SSW	1.4	0.6			10	W	W	0	0	D. clouds	
Jubbulpore	28.47	723.1	29.82	757.4	85.8	29.9	60	Calm	1.8	0.8			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation; Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,361 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.35	745.6	29.76	755.9	60.6	15.9	97	NE	2.5	1.1	.....	.....	10	.....	.....	0.547	13.9	.....	Prof. Giovanni Clodig.
Padua	29.69	753.4	29.78	755.2	59.4	15.2	97	N	7.4	3.3	.....	.....	10	.....	.....	0.240	6.1	.....	Prof. Dott. Lorenzoni
Vicenza	29.66	750.8	29.75	755.6	60.4	15.8	80	N	0	0	.....	.....	9	.....	.....	0.579	14.7	.....	Conte Alm. Da Schio.
Bergamo	28.44	722.3	29.76	755.9	59.0	15.0	89	S	.....	.....	1	.....	10	.....	.....	0.748	19.0	.....	Prof. Trionfini Carlo.
Milan	29.22	742.1	29.73	755.1	57.7	14.3	97	ESE	.....	.....	2	.....	10	.....	.....	0.024	0.6	.....	Prof. Schiaparelli.
Moncalieri	28.85	732.9	29.76	755.9	58.8	14.9	87	SE	2.5	1.1	.....	.....	9	SW	.....	0.051	1.3	.....	Prof. P. F. Denza.
Mondovi	27.80	706.2	29.71	754.5	57.7	14.3	78	W	.....	.....	2	.....	7	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.53	750.1	29.75	755.7	67.3	19.6	82	SW	.....	.....	2	.....	9	W	.....	0.181	4.6	.....	Prof. L. Vassallo.
Genoa	29.57	751.1	29.74	755.3	68.9	20.5	79	SE	8.7	3.9	.....	.....	8	S	.....	0.807	20.5	.....	Prof. G. M. Garibaldi.
Parma	29.41	747.1	29.72	754.9	60.4	15.8	90	NNE	.....	.....	4	.....	9	.....	.....	0.622	15.8	.....	Prof. P. Pigorini.
Florence	29.53	750.0	29.78	756.9	64.4	18.0	85	NE	.....	.....	2	.....	10	SW	.....	0.374	9.5	.....	Cav. F. Meucci.
Leghorn	29.67	753.7	29.76	755.8	66.2	19.0	69	W	13.0	5.8	.....	.....	10	.....	.....	0.917	23.3	.....	Prof. P. Monte.
Pesaro	29.71	754.6	29.76	755.8	72.0	22.2	66	W	10.5	4.7	.....	.....	10	S	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.27	718.1	29.81	757.1	67.3	19.6	68	SSW	.....	.....	2	.....	10	.....	.....	0.079	2.0	.....	Prof. P. Serpieri
Rome	29.69	754.2	29.87	758.6	74.5	23.6	73	S	16.8	7.5	.....	.....	9	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.74	755.5	29.94	760.5	75.9	24.4	55	SW	.....	.....	1	.....	9	S	.....	0	0	.....	Prof. L. Palmieri.
Lecce	29.72	754.9	29.97	761.2	75.2	24.0	66	SSW	17.4	7.8	.....	.....	6	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.69	754.2	29.68	759.0	74.3	23.5	64	SE	.....	.....	2	.....	10	W	.....	0.020	0.5	.....	Prof. A. Pacinotti.
Cosenza	29.06	738.2	29.93	760.1	82.0	27.8	76	SW	0	0	.....	.....	5	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.69	754.1	29.94	760.4	80.4	26.9	40	WSW	1.8	0.8	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.89	759.2	29.96	761.0	75.7	24.3	72	SW	11.2	5.0	.....	.....	10	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.63	752.6	29.82	757.4	74.4	23.6	89	S	2.3	1.0	.....	.....	4s	.....	.....	0.012	0.30	Cloudy	I. Arai, Director. Prof. P. V. Veeder.
Tokei (Yeddo) Observatory	30.01	762.2	30.07	763.8	61.7	16.5	96	NNW	5.4	2.4	.....	.....	10n	.....	.....	0.100	2.54	Light rain	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.8	17.8	29	N	.....	.....	5	2c	0	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.13	638.3	30.29	769.3	46.4	8.0	61	Calm	.....	.....	0	0	0	.....	.....	0	0	Blue sky	Prof. L. Perez.
Leon	24.51	622.6	30.09	764.4	59.0	15.0	71	NE	.....	.....	4	0	0	.....	.....	0	0	.....	Prof. M. Leal.
Mexico	23.20	589.4	30.37	771.3	46.8	8.2	71	Calm	0	0	.....	0	1s	.....	.....	0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	50.5	10.3	72	W	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	29.86	758.4	29.87	758.7	71.2	21.8	93	W	.....	.....	1	0	5	.....	N	0	0	½ cloudy	M. M. Cházaro.
San Luis Potosi	24.27	616.7	30.27	768.9	54.0	12.2	69	NE	.....	.....	1	.....	9	.....	E	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.10	764 6	30.13	765.3	79.7	26.5	69	NW	10.2	8.6	.....	3c	2k	.....	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	22.62	574.8	30.24	768 2	48.2	9	95	NNE	.....	.....	2	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.80	598.3	30.12	765.1	50.0	10.0	92	N	12.4	5.6	.....	0	0	.....	.....	0	0	Clear	Prof. P. Spina.
Durango	24.23	615.5	30.10	764.5	56.5	13.6	80	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.39	721.0	30.02	762.6	76.8	24.9	74	E	.....	.....	1	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.88	758.9	30.03	762.7	69.8	21	.....	NW	.....	.....	.....	3cs	1s	.....	.....	0	0	Fair	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.32	744.6	29.32	744.6	54.3	12.4	.....	W	.....	.....	4	.....	.....	.....	.....	0.031	0.8	.....	
Groningen	29.21	741.9	29.26	743.3	59.0	15.0	.....	S	.....	.....	4	.....	.....	.....	.....	0.169	4.3	.....	
Helder	29.22	742.2	29.22	742.2	54.7	12.6	.....	WSW	.....	.....	4	.....	.....	.....	.....	0.378	9.6	.....	
Hellevoetsluis	29.28	743.6	29.28	743.6	53.1	11.7	88	NW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.22	742.3	29.27	743.5	59.9	15.5	88	SSW	.....	.....	4	.....	8	.....	.....	0.205	5.2	Very cloudy	H. v d Bria.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	28.96	735.5	29.01	736.9	47.1	8.4	92	SE	4.5	2.0	.....	.....	10	.....	.....	0.752	19.1	Rain & fog...	
Brönö	29.21	741.9	29.25	742.9	50.7	10.4	68	SE	36	16	.....	.....	4	.....	.....	0	0	.....	
Christiania	.....	729.3	29.25	743.0	48.0	8.9	96	ENE	4	2	.....	.....	10	.....	.....	0.020	0.5	Rain & fog....	
Tromsö	29.44	747.7	29.48	748.8	39.6	4.2	71	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	30.02	762.6	30.21	767.4	63.9	17.7	88	NW	15.4	6.9	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.00	736.6	30.03	762.8	64.6	18.1	69	WSW	8.1	3.6	.....	.....	6	WSW	.....	0.039	1.0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.06	763.4	30.14	765.6	71.4	21.9	69	Calm	0	0	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.68	753.9	30.04	762.9	64.6	18.1	85	WSW	9.8	4.4	.....	.....	8	.....	.....	0.012	0.3	.....	The Staff.
Ponta Delgada, (Azores)	30.16	766.1	30.23	767.9	67.6	19.8	64	NW	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 6 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, Porto Praya	.....	.....	29.95	760.8	82.2	27.9	.....	NNE	.....	.....	6	.....	1	.....	.....	2	NE	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.26	743.1	29.67	753.5	64.4	18.0	69	S	9	4	.....	.....	5c	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Wilna	29.36	745.8	29.78	756.4	55.8	13.2	88	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Foggy	Astronomical Obs.
Dorpat	29.53	750.0	29.77	756.2	51.8	11.0	86	SSW	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.76	755 9	29.78	756.3	51.8	11.0	86	S	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.26	743.2	29.89	759.1	58.8	14.9	91	SSW	7	3	.....	.....	10k;k	s;c]	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.00	762.0	30.02	762.5	65.1	18.4	86	ENE	4	2	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.46	748.2	30.00	762.0	59.2	15.1	80	S	9	4	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.83	757.7	30.03	762.8	67.1	19.5	51	SE	4	2	.....	.....	5	.....	.....	.....	.....	Solar corona.	Meteorological Obs.
Archangel	30.00	762.1	30.02	762.6	40.8	4.9	97	ESE	13	6	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sselwerstow.
Tiflis	28.64	727.4	30.02	762.6	67.5	19.7	52	Calm	0	0	.....	.....	*0	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.17	766.4	30.09	764.3	61.7	16.5	68	ESE	11	5	.....	.....	10	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.92	760.0	30.20	767.0	45.7	7.6	83	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.12	739.7	30.12	765.1	32.5	0.3	64	NNW	11	5	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	29.91	759.8	30.15	765.7	58.3	14.6	42	NNW	2	1	.....	.....	3ks	.....	.....	.....	.....	.....	.....
Tashkend	28.54	724.9	30.28	769.2	48.6	9.2	77	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.11	739.3	30.65	753.0	32.2	0.3	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Yeniseisk	29.46	748.3	30.77	756.1	17.6	—8.0	94	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.94	760.4	30.08	764.0	56.1	13.4	64	SW	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nikolaievsk, on the Amoor	29.91	759.8	30.00	762.0	36.9	2.7	93	Calm	0	0	.....	.....	10s	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.71	754.6	29.81	757.2	71.4	21.9	52	SW	2.2	1.00	.....	.....	1k	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.74	755.3	29.79	756.7	71.2	21.8	54	W	1.6	0.79	.....	4	3	NW	.....	0.083	2.1	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.96	684.8	.....	.....	55.4	13.0	88	SW	10.4	4.64	.....	.....	9	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.72	704.4	29.94	760.4	61.3	16.3	73	SW	14.9	6.67	.....	0	7	.....	.....	0.146	3.7	Cloudy	The Staff.
Murcia, Met. Obs'y	29.78	756 4	29.93	760.1	76.1	24.5	52	S	1.0	0.47	.....	2	5	S	.....	0	0	Almost clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.95	735.4	29.84	758.0	58.3	14.6	96	SW	13.7	6.11	.....	.....	10	.....	.....	0.075	1.9	Misty	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.79	756.6	29.86	758.2	81.5	27.5	68	WNW	8.9	4.0	.....	8c;cs	3k	.....	.....	0.216	5.5	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.95	760.6	30.04	763.1	69.3	20.7	76	WSW	12.9	5.8	.....	0	7	.....	W	0.011	0.3	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.85	758.1	29.94	760.4	81.3	27.4	89	SE	0	0	.....	3k	3k	SE	SE	0.285	7.25	Cloudy	Leonardo de Tejeda, Ch'f Eng'r.

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the *Meteorological Observatory* of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Metèrs per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.7	29.71	754.7	41.0	5.0	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	Foggy	
Umea	29.58	751.2	29.63	752.5	45.3	7.4	100	E	.....	.....	2	.....	10	.....	.....	0.128	3.2	.....	
Hernosand	29.79	756.6	29.84	757.9	45.7	7.6	91	SE	.....	.....	4	.....	10	.....	.....	0.059	1.5	Raining	
Stockholm	29.36	745.8	29.54	750.3	51.6	10.9	86	SSE	.....	.....	2	.....	10	.....	.....	0.291	7.4	.....	
Wisby	29.50	749.2	29.56	750.7	55.0	12.8	85	SSE	.....	.....	6	.....	5	.....	.....	0.374	9.5	.....	
Sub-Series.																			
Upsala	29.45	747.9	29.52	749.8	50.4	10.2	93	SE	.....	.....	.....	.....	10	.....	S	0.067	1.70	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.20	716.0	29.09	754.2	63.1	17.3	63	SSW	.....	.....	3	.....	5	.....	.....	1.026	41.3	Cloudy	The Observatory.
Zurich	28.07	712.9	29.09	754.1	58.3	14.6	62	SW	.....	.....	1	.....	10	.....	.....	0.142	3.6	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.6 mm.; Thermometer, +5.8 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.99	761.8	69.8	21.0	76	NE	4	2.0	.....	0	.....	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.07	763.6	76.1	24.5	.....	W	.....	.....	1	5	.....	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria.) Lee Obs'y	29.88	758.9	29.99	761.8	81.0	27.2	63	SE	.....	.....	1	.....	3c;s	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.15	765.8	30.22	767.6	39.8	4.3	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.76	755.9	30.07	763.8	42	5.6	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. R. Bigg.
*Chatham, N B	30.16	766.1	30.23	767.8	41	5.0	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.11	764.8	30.15	765.8	46	7.8	71	NW	10	4.5	.....	.....	10s	.....	Calm	0.015	0.38	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.86	758.4	30.06	763.5	36.6	2.6	96	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	.....	.....	.....	.....	38	3.3	86	W	.....	.....	1	.....	.....	.....	.....	0	0	Fine	H. A. Johnson.
Esquimault, B. C	30.19	766.8	30.29	769.4	46.3	9.1	93	Calm	.....	.....	.....	.....	10s	.....	.....	0	0	Overcast	W. H. Bevis.
*Father Point, Quebec	30.19	766.8	30.21	767.3	39	3.9	90	Calm	0	0	.....	0	5s	.....	Calm	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.17	766.3	30.24	768.1	38.2	3.4	99	N	1	0.4	.....	0	Fog	.....	.....	0	0	Foggy	Prof. Harrison.
*Fort Garry Manitoba	29.02	737.1	29.89	759.2	24	— 4.4	100	W	10	4.5	.....	5k	5ks	W	W	0.060	1.52	Cloudy	James Stewart.
Granton, Ontario	28.82	732.0	29.92	760.0	48	8.9	.....	SW	.....	.....	1	10s	0	.....	.....	0	0	Clear	James Grant.
*Halifax, N. S	28.90	734.0	29.92	760.0	45	7.2	90	NW	10	4.5	.....	0	0	.....	.....	0.016	0.41	Clear	F. Allison, M. A.
Hamilton, Ontario	29.90	759.7	30.12	765.0	45	7.2	90	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Hazy	Geo. Dickson, M. A.
Heart's Content, N. F	29.85	758.1	30.03	762.7	40.1	4.5	96	.....	.....	.....	.....	.....	.....	.....	.....	0	0	Clear	Geo. Weedon.
*Kingston, Ontario	29.78	756.4	30.03	762.7	46	7.8	84	N	.....	.....	3	.....	10	.....	.....	0.03	0.8	Overcast	E. Weedon.
Little Glace Bay, N. S	29.65	753.1	29.97	761.2	45	7.2	88	E	1	0.4	.....	0	Haze	.....	E	0	0	Clear	S. Woods, M. A.
*Montreal, Quebec	29.73	755.1	30.06	763.5	45	7.2	88	E	14	6.3	.....	7k	0	NE	.....	0.02	0.5	Showery	C. H. Rigby.
*Parry Sound, Ontario	30.03	762.7	30.07	763.8	46.3	7.9	82	NE	14	6.3	.....	.....	.....	.....	.....	0	0	Clear	C. H. McLeod, C. E.
Peterboro, Ontario	29.92	760.0	30.12	765.0	42	5.6	97	N	10	4.5	.....	.....	Fog	.....	.....	0	0	Foggy	Rev. R. Mosley.
Port Dover, Ontario	29.26	743.2	29.95	760.7	47	8.3	85	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	J. F. Jeffers, B. A.
Port Hastings, N. S	29.35	745.5	30.13	765.3	35.7	2.1	90	Calm	.....	.....	0	.....	.....	.....	.....	0	0	Foggy	H. Morgan.
Port Stanley, Ontario	29.20	744.0	29.98	761.5	52	11.1	86	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	Peter Grant.
*Quebec, Quebec	30.04	763.0	30.10	764.5	46.5	8.1	.....	NW	8	3.6	.....	.....	.....	.....	.....	0	0	Fine	M. Payne.
*Rockliffe, Ontario	29.81	744.5	29.95	760.7	56	13.3	77	SE	12	5.4	.....	0	0	.....	.....	Inap.	Inap.	Clear	Capt. Ashe, R. N
St. Andrews, N. B	29.87	758.7	30.20	767.1	41	5.6	100	Calm	.....	.....	0	Haze	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B	29.56	750.8	30.03	762.7	40	4.4	95	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	Dr. Gove.
Stayner, Ontario	30.15	765.8	30.20	767.1	46	8.9	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Stratford, Ontario	29.17	740.9	29.95	760.7	48	8.9	86	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
*Sydney, C. B	30.05	763.3	30.08	764.0	45	7.2	94	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	R. J. Cole.
*Toronto, Ontario	29.62	752.3	30.01	762.2	46	7.8	96	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	S	6.0	2.7	.....	0	0	.....	.....	0	0	Clear	T. C. Hill.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	N	12	5.4	.....	.....	10s	.....	N	0	0	Cloudy	T. C. Hill.
.....	.....	.....	.....	.....	.....	.....	.....	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From —	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From —	Clouds. Direction. Lower. From —	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.92	760.0	30.16	766.1	38	3.3	100	Calm	0	0			Fog			0	0	Dense fog	
Alpena, Michigan	29.16	740.7	29.78	756.4	54	12.2	86	SE	6	2.7		8ck	0	S		0	0	Fair	
Atlanta, Georgia	28.80	731.5	29.93	760.2	58	14.4	93	NE	9	4.0			10s		Calm	0	0	Cloudy	
Atlantic City, New Jersey	30.16	766 1	30.17	766.3	54	12.2	86	W	1	0.4		2c	0	Calm		0	0	Clear	
Augusta, Georgia	29.78	756.4	29.96	761.0	68	17.2	94	NE	4	1.8			10s		NE	0.02	0.5	Threatening	
Baltimore, Maryland	30 11	764.8	30.16	766.1	49	9.4	100	SE	2	0.9			Fog		Calm	0	0	Foggy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	53	11.7	93	Calm	0	0		5c	Fog	W	Calm	0	0	Fair	
Bismarck, Dakota	28.02	711.7	29.88	758.9	31	—0.6	61	SE	9	4.0		10cs	0	NW		0	0	Cloudy	
Boerne, Texas	28.84	732.5			55	12.8	39	NW	12	5.4		0	0			0	0	Clear	
Boise City, Idaho	27.46	697.5	30.42	772.7	43	6.1	67	S	1	0.4		0	5s		Calm	Inap.	Inap.	Fair	
Boston, Massachusetts	30.06	763.5	30.22	767.6	53	11.7	70	Calm	0	0		0	Fog		Calm	0	0	Foggy	
Brackettville, Texas	29.20	741.7	30.27	768.8	42	5.6	50	Calm	0	0		0	0			0	0	Clear	
Breckenridge, Minnesota	28.94	735.1	30.00	762.0	21	— 6.1	93	W	7	3.1		10k	0	NW		0	0	Cloudy	
Brownsville, Texas	30.20	767.1	30.27	768.8	62	16.7	46	N	8	3.6			0			0	0	Clear	
Buffalo, New York	29.30	744.2	30.00	762.0	47	8.3	70	SE	5	2.2		0	Sm'e		Calm	0	0	Clear	
Burkes, Arizona					54	12.2	15	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.91	759.7	30.17	766.3	51	10.6	72	S	3	1.3		0	Haze		Calm	0	0	Clear	
Cairo, Illinois	29.66	753.4	30.06	763.5	42	5.6	83	NW	18	8.0			10s		NW	0.70	17.8	Cloudy	
Camp Apache, Arizona	24.76	628.9	29.76	755.9	28	— 2.2	67	N			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.27	641.8	30.07	763.8	42	5.6	40	N			1	0	0			0	0	Clear	
Camp Verde, Arizona	27.03	686.6	30.52	775.2	37	2.8	38	N			1	0	0			0	0	Clear	
Campo, California	27.55	699.8	30.12	765.0	65	18.3	26	E	18	8.0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.05	763.3	30.06	763.5	71	21.7	90	E	22	9.8			10n		SE	0.06	1.5	Light rain	
Cape Henry, Virginia	30.08	764.0	30.11	764.8	64	17.8	83	SE	8	3.6		0	8s		SW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.03	762.7	30 04	763.0	69	20.6	90	SE	11	4.9			10n		SE	0.46	11.7	Light rain	
Cape May, New Jersey	30.14	765.5	30.17	766.3	59	15.0	76	S	3	1.3		0	0			0	0	Clear	
Castroville, Texas	29.53	750.0	30.28	769.1	44	6.7	76	NW	4	1.8		0	0			0	0	Clear	
Charleston, South Carolina	29.87	758.7	29.93	760.2	69	20.6	90	E	11	4.9			10s		E	0.93	23.6	Threatening	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	41	5.0	33	W	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.26	743.2	29.97	761.2	41	5.0	82	NW	8	3.6			10s		Calm	0.50	12.7	Cloudy	
Cincinnati, Ohio	29.26	743.2	29.90	759.4	57	13.9	69	SE	2	0.9			9ks		SW	0	0	Threatening	
Cleveland, Ohio	29.23	742.4	29.95	760.7	49	9.4	71	SE	10	4.5		0	0			0	0	Clear	
Coleman City, Texas	28.50	723.9	30.26	768.6	39	3.9	63	NW	11	4.9		0	0			0	0	Clear	
Columbus, Ohio	29.07	738.4	29.90	759.4	49	9.4	71	SE	4	1.8		8k	0	SE		0	0	Fair	
Concho, Texas	28.28	718.3	30.04	763.0	34	1.1	61	W	2	0.9		0	0			0	0	Clear	
Corsicana, Texas	29.81	757.2	30.30	769.6	43	6.1	75	N	3	1.3		0	0			0	0	Clear	
Davenport, Iowa	29.48	748 8	30.14	765.5	41	5.0	65	W	8	3.6		4k	0	S		Inap.	Inap.	Fair	
Decatur, Texas	29.20	741.7	30.43	772.9	42	5.6	58	NW	6	2.7		0	0			0	0	Clear	
Denison, Texas	29.48	748.8	30.31	769.9	43	6.1	75	NW	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.88	631.9	30.10	764.5	49	9.4	24	W	6	2.7		2c	0	Calm		0	0	Clear	
Des Moines, Iowa	29.20	741.7	30.12	765.0	30	— 1.1	78	Calm	0	0		0	Haze		Calm	0.03	0.8	Clear	
Detroit, Michigan	29.20	741.7	29.85	758.2	54	12.2	67	SW	6	2.7		0	0			0	0	Clear	
Dodge City, Kansas	27.58	700.5	30.02	762.5	26	— 3.3	75	W	4	1.8		0	0			0	0	Clear	
Dubuque, Iowa	29.37	746.0	30.10	764.5	32	0.0	79	NW	6	2.7		5k	1s	NW	Calm	0.22	5.6	Fair	
Duluth, Minnesota	29.22	742.2	29.91	759.7	33	0.6	79	SW	4	1.8			10s		SW	0.02	0.5	Cloudy	
Eagle Pass, Texas	29.60	751.8	30.38	771.6	47	8.3	55	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	30.14	765.5	30.21	767.3	48	8.9	85	N	4	1.8		0	0			0	0	Clear	
Edinburg, Texas					61	16.1	82	N			6	0	0			0	0	Clear	
El Paso, Texas					61	16.1	40	W			1	0	0			0	0	Clear	
Erie, Pennsylvania	29.25	742.9	29.96	761.0	52	11.1	60	S	13	5.8		0	0			0	0	Clear	
Escanaba, Michigan	29.22	742.2	29.89	759.2	36	2.2	80	NW	8	3.6			10s		NW	0.07	1.8	Cloudy	
Florence, Arizona	28.64	727.4	30.24	768.1	57	13.9	31	Calm			0	0	0			0	0	Clear	
Fort Craig, New Mexico	25.80	655.3	29.87	758.7	29	— 1.7	59	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.44	646.2	30.40	772.1	53	11.7	19	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.70	754.4	30.28	769.1	31	— 0.6	89	Calm	0	0			Fog		Calm	Inap.	Inap.	Foggy	
Fort Griffin, Texas	29.02	737.1	30.36	771.1	38	3.3	63	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	28.07	713.0	30.07	763.8	42	5.6	58	W	5	2.2		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.05	737.9	30.21	767.3	38	3.3	72	N	5	2.2		0	0			0	0	Clear	
Fredericksburg, Texas	28.56	725,2	30.14	765.5	57	13.9	41	SW	5	2.2		0	0			0	0	Clear	
Galveston, Texas	30.17	766.3	30.21	767.3	59	15.0	59	N	24	10.7		Haze	0	Calm		0	0	Hazy	
Graham, Texas	29.21	741.9	30.34	770.6	33	0.6	79	Calm	0	0		0	Sm'e			0	0	Smoky	
Grand Haven, Michigan	29.23	742.4	29.88	758.9	44	6.7	84	NW	16	7.2			10n		Calm	0.18	4.6	Light rain	
Indianapolis, Indiana	29.16	740.7	29.94	760.5	44	6.7	92	NW	8	3.6			10n		NW	0.04	0.8	Light rain	
Indianola, Texas	30.26	768.6	30.29	769.4	69	15.0	48	N	24	10.7		0	0			0.01	0.3	Clear	
Jacksboro, Texas	29.18	739.9	30.32	770.1	38	3.3	63	NW	3	1.3		0	0			0	0	Clear	
Jacksonville, Florida	29.74	755.4	29.76	755.9	70	21.1	90	N	9	4.0			10n		N	1.58	40.1	Light rain	
Keokuk, Iowa	29.49	749.0	30.13	765.3	34	1.1	79	W	4	1.8		0	0			0.20	5.1	Clear	
Key West, Florida	29.80	756.9	29.83	757.7	76	24 4	82	NW	16	7.2		10c;k	0	Calm	NW	1.22	31.0	Cloudy	
Kittyhawk, North Carolina	30.07	763.8	30.10	764.5	67	19.4	95	E	17	7.6		8cs	2ks	SE	SE	0	0	Cloudy	
Knoxville, Tennessee	28.98	736,1	29.98	761.5	50	10.0	82	Calm	0	0		2ck	Sm'e	S		0	0	Clear	
La Crosse, Wisconsin	29.26	742.9	30.00	762.0	36	2.2	85	SW	6	2.7		0	0			0.23	5.8	Clear	
La Mesilla, New Mexico	26.35	669.3	30.50	774.7	33	0.6	33	NE	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.91	759.7	30.26	768.6	49	9.4	51	NW	3	1.3		0	0			0	0	Clear	
Lead City, Dakota	24.72	627.9	29.99	761.7	40	4.4	82	NW	9	4.0			10s		NW	0.05	1.3	Cloudy	
Leavenworth, Kansas	29.31	744.5	30.19	766.8	35	1.7	70	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.72	754.9	30.06	763.5	55	12.8	39	N	6	2.7		0	0			0	0	Clear	
Louisville, Kentucky	29.31	744.5	29.86	758.4	59	15.0	70	SE	3	1.3				10s;sm'	NW;Calm	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.44	747.8	30.12	765.0	52	11.1	73	Calm	0	0		0	8ks		Calm	0	0	Cloudy	
Madison, Wisconsin	29.00	736.6	30.02	762.5	33	0.6	79	W	8	3.6		0	5s		W	0.32	8.1	Fair	
Marquette, Michigan	29.13	739.9	29.84	757.9	36	2.2	71	W	13	5.8		2k	8ks	Calm	W	0.24	6.1	Cloudy	
Mason, Texas	28.64	727.4	30.48	774.2	40	4.4	63	NW	2	0.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.23	742.4	29.98	761.5	35	1.7	61	W	18	8.0			10s		Calm	0.07	1.8	Cloudy	
Mobile, Alabama	29.91	759.7	29.95	760.7	64.5	18.1	91	SW	3	1.3			10s		W	0	0	Cloudy	
Montgomery, Alabama	29.69	754.1	29.92	760.0	60	15.6	82	E	2	0.9		0	8s		Calm	0	0	Fair	
Morgantown, West Virginia	28.97	735.8	30.04	763.0	42	5.6	83	Calm	0	0		0	Fog		Calm	0	0	Clear	
Mt. Washington, N. H.	24.04	610.6	30.40	772.1	41	5.0	65	NW	12	5.4		0	Haze		Calm	0	0	Clear	
Nashville, Tennessee	29.43	747.5	29.96	761.0	51	10.6	86	W	12	5.4			10n		W	Inap.	Inap.	Light rain	
New Haven, Connecticut	30.08	764 0	30.20	767.1	48	8.9	85	W	3	1.3		0	Haze		Calm	0	0	Clear	
New London, Connecticut	30.17	766.3	30.22	767.6	51	10.6	79	N	4	1.8		0	1s		W	0	0	Clear	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	60	15.6	82	NW	16	7.2			10n		Calm	0.05	1.3	Light rain	
Newport, Rhode Island	30.16	766.1	30.21	767.3	53	11.7	80	Calm	0	0		0	0			0	0	Clear	
New York, New York	30.03	762.7	30.21	767.3	51	10.6	78	W	2	0.9		0	Sm'e		Calm	0	0	Smoky	
Norfolk, Virginia	30.06	763.5	30.12	765.0	61	16.1	88	E	4	1.8		10cs	0	Calm		0	0	Cloudy	
North Platte, Nebraska	27.17	690.1	29.86	758.4	27	— 2.8	64	NW	7	3.1		0	0			Inap.	Inap.	Clear	
Olympia, Washington Ter.	30.25	768.3	30 28	769.1	50	10.0	93	S	7	3.1			10s		Calm	1.06	26.9	Cloudy	
Omaha, Nebraska	28.98	736 1	30.11	764 8	31	— 0.6	79	SW	2	0.9		0	0			0.02	0.5	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.76	755.9	30.08	764.0	50	10.0	72	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pembina, Dakota	29.04	737.6	29.92	760.0	18	— 7.8	84	W	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Philadelphia, Pa	30.14	765.5	30.19	766.8	43	6.1	100	NE	5	2.2	.....	.....	Fog	.....	Calm	0	0	Foggy	
Phœnix, Arizona	28.99	736.3	.....	.....	54	12.2	38	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.83	452.2	30.04	763.0	21	— 6.1	43	NE	36	16.1	.....	8cs	0	NW	.....	0	0	Cloudy	
Pioche, Nevada	24.38	619.2	30.15	765.8	37	2.8	53	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.22	742.2	30.05	763.3	40	4.4	91	E	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.20	741.7	29.85	758.2	55	12.8	68	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Portland, Maine	30.18	766.6	30.23	767.8	51	10.6	72	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.26	768.8	30.35	770.9	50.0	10.0	97	NW	7	3.1	.....	.....	10n	.....	Calm	0.01	0.3	Light rain	
Prescott, Arizona	29.02	695.5	30.38	771.6	32	0.0	40	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.53	750.0	30.39	771.9	45	7.2	51	N	1	0.4	.....	Sm'e	Sm'e	.....	.....	0	0	Smoky	
Punta Rassa, Florida	29.76	755.9	29.77	756.1	73	22.8	81	NW	24	10.7	.....	0	5ks	.....	NW	0.14	3.6	Fair	
Red Bluff, California	29.84	757.9	30.20	767.1	57	13.9	63	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	30.18	766.6	30.41	772.4	61	16.1	55	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.41	747.0	30.02	762.5	50	10.0	65	SW	7	3.1	.....	0	Sm'e	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.83	757.7	30.42	772.7	43.0	6.1	96	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	30.09	764.3	30.17	766.3	53.5	11.9	77	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.54	750.3	30.14	765.5	40	4.4	82	NW	12	5.4	.....	0	5s	.....	.....	0.27	6.9	Fair	
St. Marks, Florida	29.85	758.2	29.87	758.7	67	19.4	84	NW	8	3.6	.....	8ck	0	N	.....	0.02	0.5	Fair	
St. Paul, Minnesota	29.09	738.9	29.95	760.7	29	— 1.7	67	SW	7	3.1	.....	0	0	.....	.....	0.05	1.3	Clear	
Salt Lake City, Utah	25.99	660.1	30.32	770.1	45.0	7.2	46	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.04	737.6	30.24	768.1	49	9.4	51	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.98	761.5	30.06	763.5	59	15.0	33	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.23	742.4	29.89	759.2	53	11.7	67	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.16	766.1	30.19	766.8	51	10.6	93	W	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
San Francisco, California	30.00	762.0	30.15	765.8	57	19.4	50	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.44	595.4	29.98	761.5	32	0.0	40	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.79	756.7	29.88	758.9	67	19.4	95	NE	8	3.6	.....	.....	10s	.....	Calm	0.30	7.6	Threatening	
Shreveport, Louisiana	30.01	762.2	30.24	768.1	49	9.4	78	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.52	622.8	.....	.....	35	1.7	35	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.97	761.2	30.00	762.0	66	18.9	95	NE	7	3.1	.....	.....	10n	.....	SE	0.09	2.3	Light rain	
Springfield, Massachusetts	30.07	763.8	30.21	767.3	44	6.7	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.26	692.4	30.26	768.6	33	0.6	50	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.18	766.6	30.23	767.8	55	12.8	87	NE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.19	741.4	29.85	758.2	54	12.2	67	SE	6	2.7	.....	0	5ks	.....	SW	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	61	16.1	40	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.82	757.4	29.85	758.2	70	21.1	80	NE	12	5.4	.....	.....	10ks	.....	NE	0.54	13.7	Threatening	
Umatilla, Oregon	29.82	757.4	.....	.....	58.2	14.6	72	W	16	7.2	.....	.....	10s	.....	W	0	0	Cloudy	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	100	SW	.....	.....	1	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.44	747.8	30.28	769.1	46	7.8	40	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.90	759.4	30.17	766.3	52	11.1	79	N	13	5.8	.....	.....	10s	.....	N	0.42	10.7	Cloudy	
Virginia City, Montana	24.34	618.2	29.82	757.4	47	8.3	62	SW	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy	
Visalia, California	29.88	757.7	30.20	767.1	48	8.9	86	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.05	763.3	30.17	766.3	44	6.7	100	NE	1	0.4	.....	0	Fog	.....	NE	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	48	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.92	760.0	30.00	762.0	63	17.2	100	NE	7	3.1	.....	.....	10n	.....	Calm	0.20	5.1	Light rain	
Winnemucca, Nevada	26.99	660.1	30.36	770.9	34	1.1	61	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	30.15	765.8	30.20	767.1	60	15.6	82	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.78	731.0	30.12	765.0	30	— 1.1	67	SW	3	1.3	.....	8cs	0	W	.....	0	0	Fair	
Yuma, Arizona	29.93	760.2	30.09	764.3	68	20.0	56	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2c	0	N	.....	0.15	3.8	Fair	J. Fortescue, W. Wood.
York Factory, B. A.	29.88	758.9	29.92	760.0	8.0	—13.3	89	E	15	6.7	.....	8c	4ks	Calm	W	0.18	4.6	Fair	Chas. Hasselbrink.
Havana, Cuba, W. I.	29.84	757.9	29.86	758.4	79	26.1	74	NW	12.0	5.4	.....	8ck?	8ks?	.....	SE	Blank	Blank	.....	Robert Mason.
Santiago de Cuba, W. I.	29.89	759.2	29.92	760.0	80	26.7	87	SE	.....	.....	1	8c	5ks	NE	.....	0.09	2.3	Clear?	G. O. Gellich.
St. Thomas, W. I.	.....	.....	.....	.....	6	30.0	79	E	4	1.8	.....	8c?	8n?	E	S	0.03	0.8	.....	James Gall.
Kingston, Jamaica, W. I.	30.09	764.3	30.10	764.5	80	26.7	95	Calm	0	0	.....	.....	.....	.....	.....	0	0	Partly cl'dy.	F. M. Everett.
Navassa, W. I.	29.84	757.9	29.92	760.0	82.5	28.1	.....	SE	7.5	3.4	.....	.....	.....	.....	.....	0	0	Fair	C. J. Hering
Paramaribo, D. Guiana, S. A.	29.97	761.2	29.97	761.2	82	27.8	79	E	.....	.....	3	3c	5k	E	.....	0.03	0.8	.....	Thomas Herran.
Medellin, Colombia, S. A.	25.24	641.1	.....	.....	65.0	18.3	85	Calm	0	0	.....	1cs	4s	.....	.....	.....	.....	.....	Robert Elworthy.
Portland, Jamaica, W. I.	29.72	754.9	30.03	762.7	74	23.3	95	E	.....	.....	.....	k	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,933 (?) ft.. or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 626.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,054.6 ft., or 321.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,776.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,696 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,645 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.04 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.08	764.0	67	19.4	67.5	19.7	82	NW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.20‡	767.1‡	.....	.....	49	9.4	71	NNE	1	0.4	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan	30.08*	764.0*	66.5	19.2	61.5	16.4	94	NW	.....	.....	2	.....	10n	.....	NNW	Inap.	Inap.	.....	.....	Raining	
Adams. Valparaiso, Chili	30.08	764.0	63	17.2	58	14.4	82	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Fair	
Alaska. Callao, Peru	30.12	765.0	68	20.0	61	16.1	88	NW	.....	.....	1	.....	10	.....	NW	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey	29.96‡	761.0‡	.....	.....	74	23 3	68	W	.....	.....	1–2	.....	8	.....	Calm	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan	29.93	760.2	76	24.4	76	24.4	91	SSW	.....	.....	1	.....	2	.....	SW	.....	.....	Smooth	.....	Fair	
Canonicus, New Orleans, La	30.00	762.0	47	8.3	60	15.6	88	SW	.....	.....	6	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.	30.19‡	766.8‡	.....	.....	52	11.1	86	SW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Foggy	
Constitution, Havre, France	.....	.....	.....	.....	53	11.7	86	SW	.....	.....	4	.....	10	.....	Calm	.....	.....	.....	.....	Rainy	
Despatch, Constantinople, Turkey	29.97‡	761.2‡	.....	.....	75	23.9	72	NE	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, Cape Town	29.90	759.4	62	16.7	61	16.1	100	NNW	.....	.....	2	.....	10	.....	NW	.....	.....	.....	.....	Cloudy	
Franklin, Norfolk, Va.	30.23	767.8	67	19.4	61	16.1	100	ENE	3.5	1.6	.....	.....	10	.....	S	0	0	.....	.....	Cloudy.....	
Gettysburg Port Said, Egypt	29.96‡	761.0‡	.....	.....	77	25.0	95	NW	.....	.....	2	.....	2	.....	.....	0	0	Smooth	NE	D. clouds.....	
Guard. N 9° 55', W. 42° 28'	29.93	760.2	85	29.4	84	28.9	83	NE	.....	.....	3	.....	2	.....	NE	.....	.....	Smooth	.....	Clear.....	
Hartford, St. Catherine Strait	29.87	758.7	73	22.8	72	22.2	76	W	12.0	5.4	.....	.....	2	.....	W	0	0	Smooth	.....	Clear	
Marion, Trieste, Austria	29.76	755.9	66	18.9	67	19.4	84	SSE	.....	.....	1	.....	10	.....	S	Mod'ate	Mod'ate	.....	.....	Light rain...	
Michigan, Erie, Pa	29.96†	761.0†	.....	.....	50	10.0	64	SSE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Monocacy. Yokohama, Japan	30.08‡	764.0‡	.....	.....	63	17.2	89	NNW	.....	.....	3	.....	10	.....	NNW	.....	.....	.....	.....	Raining	
New Hampshire, Port Royal, S. C.	30.06	763.5	70	21.1	52	11.1	76	NE	6	2.7	.....	.....	10	.....	SW	0	0	.....	.....	Cloudy.....	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	63	17.2	83	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.10	764.5	61	16.1	54	12.2	93	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Passaic, Washington, D. C.	.....	.....	.....	.....	41	5.0	83	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Plymouth. St. Thomas, W. I.	30.10	764.5	84	28.9	85	29.4	87	ENE	.....	.....	1	.....	5	.....	E	.....	.....	.....	.....	Squally.....	
Powhatan, N. 41° 27' 32", W. 70° 07' 40"	30.20‡	767.1‡	.....	.....	59	15.0	76	WNW	4.2	1.9	.....	.....	2	.....	.....	0	0	Smooth	NW	Clear.....	
Quinnebaug, Norfolk, Va.	30.13‡	765.3‡	.....	.....	60	15.6	94	NE	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Ranger, Hong-Kong, China	30.02	762.5	81	27.2	81	27.2	91	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas	30.18	766.6	64	17.8	65	18.3	94	NW	.....	.....	4	.....	2	.....	Calm	.....	.....	.....	.....	Squally.....	
Santee, Annapolis, Md.	30.09‡	764.3‡	.....	.....	53	11.7	93	S	.....	.....	1	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Saratoga, Philadelphia, Pa.	30.10	764.5	.....	.....	45	7.2	92	E	.....	.....	2	.....	.....	.....	.....	0	0	.....	.....	Foggy	
St. Louis, League Island, Pa	30.09	764.3	62	16.7	44	6.7	100	NE	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Dense fog....	
Supply, Havre, France	29.42	747.3	59	15.0	54	12.2	87	WNW	.....	.....	3–4	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Swatara, Boston, Mass.	30.21‡	767.3‡	.....	.....	61	16.1	66	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Trenton, Villafranca, France	29.71‡	754.6‡	.....	.....	71	21.7	85	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Vandalia, Port Mahon, Minorca Id., Baleric Ids.	29.88‡	758.9‡	.....	.....	75	23.9	50	SW	.....	.....	2	.....	2	.....	SW	.....	.....	.....	.....	Clear.....	
Wabash, Boston, Mass.	.....	.....	.....	.....	51	10.6	79	W	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Hazy...	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, Yokohama, Japan		30.09*	764.3*	64	17.8	100	NE			4		6		NE				D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 22° 55′, W. 109° 11′		29.90*	759.4*	85	29.4	87	N			5		0			0	Short	N	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 47° 48′, W. 124° 51′		30.30*	769.6*	55	12.8	74	N			3		10			Light	Heavy	WSW	Hazy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 48° 25′, W. 51° 30′		29.79†	756.7†	56	13.3		NW			6		5k		NW	Rough	Mod'ate	WNW	Fair	Capt. W. H. Thompson.
S. S. Celtic, New York, N. Y.		30.16*	766.1*	48	8.9	??	WNW			4				WNW	0			D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreasen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 48° 15′, W. 50° 57′		29.71	754.6	51.0	10.6	82	NW			8		8		NW	6 hours	3–4	NW		Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.16*	766.1*	50	10.0	100	Calm			0					0			Dense fog	Captain Sargent.
S. S. Ohio, Liverpool		29.14	740.1	58	14.4	76	SW			3		8?		SW	0			Clear	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.																			
Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.																			
S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 47° 21′ W. 40° 42′		29.73*	755.1*				SW	16	7.2			7		W		Mod'ate	WSW	Raining	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.																			
Furnished by the coöperation of A. Schumacher, & Co., Agents.																			
S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)																			
Furnished by the coöperation of the Observer named.																			
Schooner Addie Fuller, Porto Cabello, Venezuela		29.84	757.9	83	28.3	75	Calm	0	0			2ck		Calm	0			Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 23, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			30.02	762.4	72.9	22.7	72	NNW			3		0			0	0	Clear	Kesxuche.
Algiers			30.06	763.4	74.8	23.8	70	W			3		1			0	0	Very fair	Tourillere.
La Calle			30.06	763.6	74.5	23.6	77	NNW			3		8			0	0	Very cloudy	Foufrede.
Tunis			30.07	763.7	77.7	25.4	61	NNW			3		10			0.012	0.3	Covered	Jacques.
Sfax			30.12	765.0	78.8	26.0	.....	ENE			5		9			0	0	Covered	Gau.
Saida			30.10	764.6	65.3	18.5	75	N			1		3			0	0	Pretty fair	Herbin.
Tebessa			30.05	763.3	70.9	21.6	68	N			3		7			Blank	Blank	Very cloudy	Watrin.
Geriville			30.10	764.5	67.8	19.9	28	Calm			0		2			0.551	14.0	Fair	Brugniaux.
Laghouat			30.09	764.3	64.0	17.8	74	S			5		4			0	0	Cloudy	Bertrand.
Biskra			30.08	763.9	77.0	25.0	47	NW			1		5			0.039	1.0	Cloudy	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.21	741.8	29.74	755.3	66.6	19.2	69	SW			4		6			0.177	4.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.92	734.6	29.67	753.7	59.4	15.2	78	WSW			3		10			0.220	5.6		Dr. Wierzbiski
Eperies	28.79	731.3	29.65	753.1	59.0	15.0	91	Calm			0		10n			0	0		Julius Mikolka.
Gratz	28.56	725.3	29.81	757.2	48.6	9.2	86	NW			6		10			0.016	0.40		Andreas Rospini.
Hermannstadt	28.28	718.4	29.72	755.0	63.7	17.6	62	NW			1		8			0	0		Prof. A. Gottschling.
Kremsmünster	28.52	724.4	29.87	758.6	49.3	9.6	74	W			3		10			0.181	4.6		Prof. C. Wagner.
Lemberg	28.64	727.5	29.61	752.2	55.0	12.8	95	SE			2		10			0.492	12.5		Dr. T. Stanecki.
Pola	29.67	753.5	29.78	756.3	68.0	20.0	75	WSW			1		9cks			0.665	16.9		R. Hydrographic Office.
Szathmar	29.27	743.5	29.69	754.0	64.8	18.2	76	S			5		5			0.252	6.4		Julius Csics, S. J.
Szegedin	29.43	747.6	29.71	754.5	67.8	19.9	80	SW			2		6			0.063	1.60		Karl Stancel.
Trieste	29.70	754.3	29.80	756.9	66.2	19.0	87	SW			1		10			0	0		P. Busin.
Vienna	29.12	739.7	29.84	757.8	53.4	11.9	73	W			3		10			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																0.083	2.1		Prof. M. Passau.
Brussels	29.48	748.9	29.69	754 0	43.9	6.6	93	WSW			3		10			0.309	7.85	Light rain	Royal Observatory
Furnes	29.61	752.1	29.63	752.7	48.6	8.9	87	SSW			4		7			0.126	3.2	Heavy rain	M. E. de Cae
Maeseyck	29.60	751.7	29.72	755.0	51.4	10.8	77	SW			4		10			0.091	2.3		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

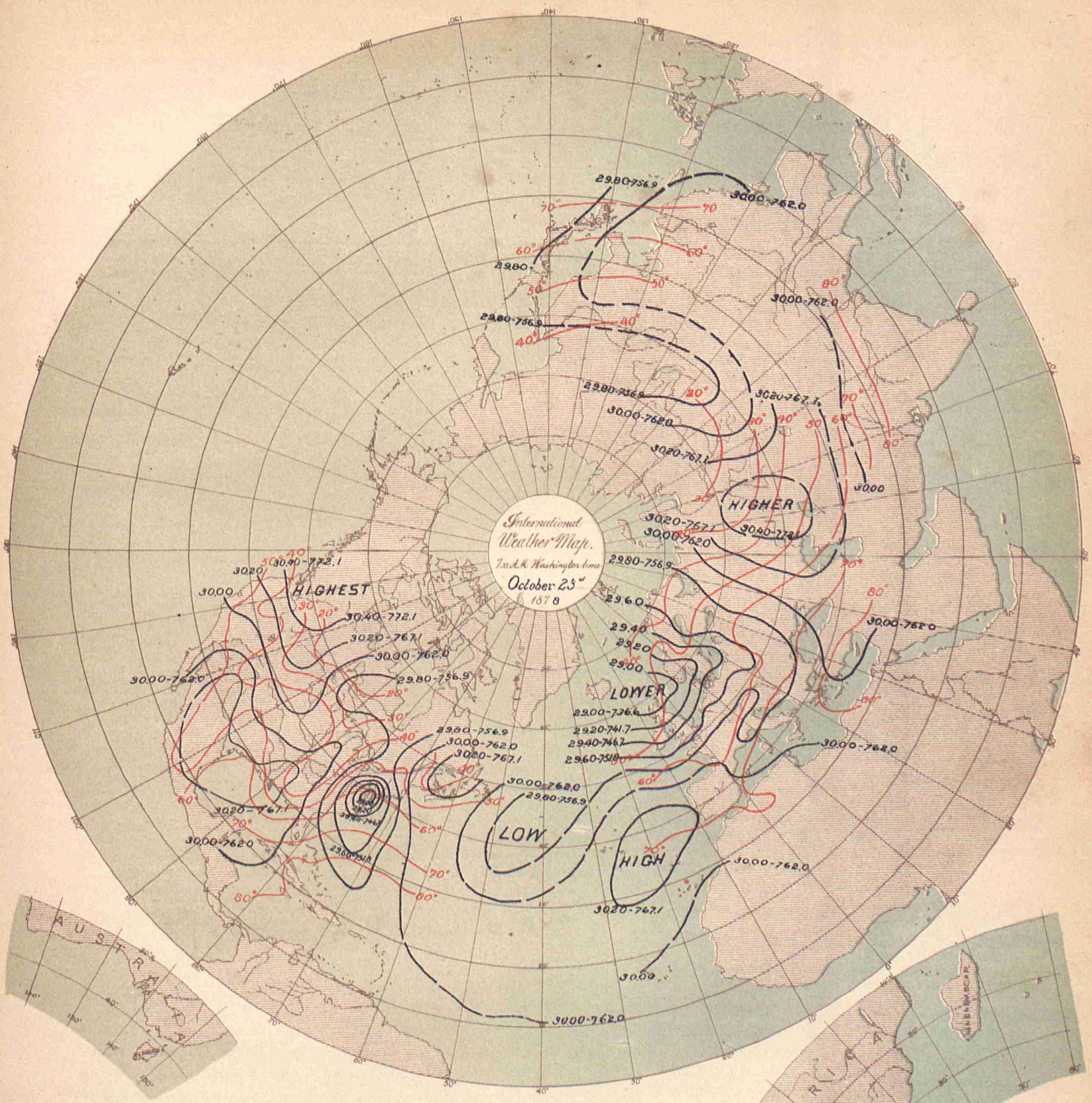
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.93	734.8	29.02	737.1	46.4	8.0		S	22	9.8			9			0	0	Overcast	W. Boswell.
Ardrossan	29.08	738.6	29.10	739.1	50.0	10.0		SW			6		9					Overcast	George Carrick.
Armagh, Observatory			29.27	743.4	47.9	8.8		WSW	18	8.0			7					Squally	S. Call.
Bidston, (Liverpool Obs.)			29.38	746.2	50.0	10.0		WSW	29	13.0			7					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.97	735.8	29.37	746.0	48.5	9.2		W			6		5			0.22	5.6	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	85.0	29.4		NE			2		3					D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.62	749.2	53.0	11.7		SW			2		7					Showery	H. Todd. [H. C.
Cardington			29.54	750.3	52.0	11.1		SW			1		6					D. clouds	John McLaren.
Chatham, School M. E.	29.45	748.0	29.58	751.3	55.2	12.9		SW			2		2					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	28.15	715.0	29.62	752.3	46.0	7.8		W			3		6					Showery	Alexander Watt.
Donaghadee	29.22	742.2	29.25	742.9	47	8.3		W			5		5					D. clouds	J. Mac Gowan.
Dover	29.57	751.1	29.59	751.6	54	12.2		W			4		3					¾ clouded	J. Costello.
Falmouth, Observatory	29.47	748.5	29.69	754.1	53.3	11.8		W			4		5					D. clouds	The Staff.
Fort Napier, (Natal)	27.42	696.5	29.74	755.4	75.4	24.1		E			2		6					D. clouds	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.69	754.1	29.92	760.0	86	30.0		Calm			0		5					D. clouds	
Galway, Queen's College			29.38	746.2	51	10.6		W			4		8					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.07	763.8				W			1		1					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.90	734.0	29.11	739.4	44.9	7.2		SW			8		10					Raining	D. G. Maclean.
Great Yarmouth	29.48	748.8	29.49	749.0	51	10 6		WSW			4		3					Blue sky	G. T. Watson.
Greenwich, Royal Obs'y	29.41	747.0	29.58	751.3	52.7	11.5		WSW			3		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.52	749.8	29.74	755.4	54.5	12.5		WSW			5		5			Blank	Blank	Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.68	753.9	54	12.2		SW			3		ck			0.23	5.8	Showery	M. P. Moyle.
Holyhead	29.36	745.7	29.41	747.0	50	10.0		WSW			5		8					D. clouds	John Tilston.
Jersey	29.57	751.1	29.76	755.9	55.3	12.9		WNW			6		8			Blank	Blank	Squally	J. Fisher.
Kew, Observatory	29.57	751.1	29.61	752.1	52.0	11.1		WSW					6					Threatening	The Staff.
Kingstown	29.37	746.0	29.39	746.5	50	10.0		W			5		10					Raining	George Mitchell.
Leicester, Museum			29.47	748.5	50.6	10.3		SW			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.98	761.5	77	25.0		NNW			2		48					D. clouds	Sergt. Beckett.
Nairn	28.82	732.0	28.91	734.3	46	7.8		SW			3		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			29.90	759.4	78.0	25.6		W			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	28.27	718.0	29.46	748.3	54.8	12.7		SW			5		7c;ck		WSW	0.028	0.71	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.95	735.3	29.47	748.5	51.0	10.6		WSW			6		8					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.56	750.8	51	10.6		W			6		6					D. clouds	H. E. Bellamy.
Plymouth	29.58	751.3	29.66	753.4	53.8	12.1		WSW			2		2					D. clouds	John Merrifield.
Roche's Point	29.50	749.3	29.55	750.6	51	10.6		WNW			5		5					½ clouded	W. Kennedy.
Saint Ann's Head	29.38	746.2	29.54	750.3	52	11.1		W			6		6					Squally	John C. Walker.
Sandwick Manse, (Orkneys.			28.87	733.3	49	9.4		S	25	11.2			1					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.62	757.4	70.4	21.3		Calm			0		9			Blank	Blank	Gloomy	Sergt. W. H. Lyne.
Sheffield	29.14	740.1	29.42	747.3	50.6	10.3		SW			5		7			0	0	Overcast	W. F. Cooper.
Silloth, Rectory	29.22	742.2	29.25	742.9	49.9	9.9	75	W			6		6			0.020	0.51	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	28.97	735.8	29.38	746.2	47.7	8.7		SW			4		8					Squally	Rev. S. J. Perry.
Strathfield Turgiss	29.38	746.2	29.59	751.6	50.1	10.1		W			1-2		4					Showery	Rev. C. H. Griffith, F.M.S.
Thurso	28.82	732.0	28.88	733.5	46	7.8		SSE			4		9					Showery	John Trotter.
Truro, Royal Institution			29.79	756.7	57	13.9		W			7		5					D. clouds	W. Newcombe.
Valencia, Observatory	29.55	750.6	29.58	751.3	52.6	11.4		W	27	12.1			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.52	749.8	52.0	11.1	77	W			2		0			0.05	1.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.01	762.2	77.6	25.3	63	ENE	13.5	6.0		0	3		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	29.80	756.9	29.90	759.4	54.0	12.2	92	SW	10	4.5			10			0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 0′, W. 43° 30′			29.63	752.6	53	11.7		N			2		3			4	Confused.	D. clouds	Capt. Alex. Wilson.
Barque Commewyne, N. 24° 10′, W. 50° 5′			30.06	763.5	89	31.7		SSW			1		1			1	SSW	Blue sky	Capt. A. Buchan.
S. S. Gordon Castle, N. 40° 40′, W. 61° 5′			30.15	765.8	59	15.0		ENE			2		10			3	NE	Overcast	Capt. W. Waring.
Barque Margaret Smith, N. 23° 5′, W. 80° 0′			29.94	760.5	81	27.2					3		4				SE	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.28	667.5	30.00	762.0	65.3	18.5	100	E			2		10n			0.5	12.7		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.41	747.0	29.46	748.2	53.2	11.8	71	W			4		1						
Fanöe	29.35	745.6	29.37	746.1	51.6	10.9	89	WSW			6		8						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.81	731.8	28.85	732.7	47.3	8.5	79	SE			4		5						
Vestervig	29.17	740.9	29.34	745.2	49.3	9.6	89	SW			6		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.30	744.2	29.35	753.2	53.6	12	80	SW			3		5		SW	0.232	5.9	Cloudy	Collignon, Director.
Amiens, Normal School	29.61	752.2	29.72	755.0	51.8	11.0	75	SW			3		8		E	0.316	8.0	Very cloudy	Bonvallet, Director.
Avignon, Normal School	29.92	759.9	30.00	761.9	63.5	17.5	73	N			1		8		W	0	0	Very cloudy	M. Girard, Director.
Bar-sur-Seine	29.33	744.9	29.38	759.0	54.3	12.4	60	SW			3		8kn		SW	0.218	5.4	Very cloudy	C. Saillard.
Beauvais, Normal School	29.50	749.3	29.78	756.5	53.1	11.7	70	WSW			2		8		WSW	0.246	6.25	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	29.04	737.5	29.92	760.0	58.3	14.6	57	S			6		8		SW	0.449	11.4	Very cloudy	M. Carre, Director.
Bourg-en-Bresse, N. School	29.05	737.8	29.97	761.1	56.8	13.8	76				4		5cn		S	0.28	7.	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.34	745.3	29.89	759.2	56.5	13.6	95	SW			1		5k		SW	0.039	1.00	Cloudy	A. Waquet, Director.
Brest, Naval Observatory	29.54	750.4	29.79	756.6	58.0	14.8	70	W			3		3		W	0.148	3.75	Squally	M. de Rermaur, Director.
Carcassonne, Normal School	29.58	751.3	29.99	761.8	60.8	16	69	W			3		5	NW	NW	0.04	1.	Cloudy	Septembre, Director.
Caen	29.50	749.3	29.58	751.2	54.0	13.2	78	SW			2		2		SW	0.622	15.8	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.24	742.8	29.81	757.2	53.6	12	78	W			4		4		E	0	0		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.50	749.3	29.82	757.3	53.4	11.9	83	SW			4	8c		SW		0.295	7.5	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.62	726.9	29.97	761.2	55.4	13.0	62	SW			1		10		W	0.213	5.4	Covered	Alluard, Director.
Commercy, Normal School	29.02	737.1	29.91	759.6	51.4	10.8	65	W			3		8kn		SW	0.593	15.05		Dr. Coulet, Director.
Commune de Grèasque*	28.89	733.9	30.04	762.9	62.1	16.7	81	W			3		5	W		0.068	1.6	½ covered	M. Kina.
Grenoble, Normal School	29.21	741.8	29.97	761.2	57.6	14.2	72	ENE			1		10n		S	0.148	3.75	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.71	754.5	29.92	759.9	57.9	14.4	74	W			1		5		W	0.20	5.	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.57	751.0	29.87	758.8	55.2	12.9	64	W			4		5		W	0.305	7.75	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.1	29.97	761.3	55.4	13	63	SW			4		5		W	0.283	7.20	Cloudy	Baudry, Director.
Lorient, Naval Observatory	29.78	756.5	29.88	759.0	56.5	13.6	73	W			3				W	0.646	16.4		Lt T. Carré, Director.
Mâcon, Normal School	29.98	761.6	30.02	762.4	57.2	14	72	NNE			1		5		NNE	0.228	5.8	Cloudy	M. Galsin, Director.
Mirecourt, Normal School	28.82	732.0	29.85	758.3	52.9	11.6	71	SW			4		10kn		NNE	0.24	6.	Covered	M. Barbier, Director.
Nismes, Normal School	29.80	756.8	30.00	761.9	64.8	18.2	53	NW			1		2		NW	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.91	734.2	29.97	761.3	55.8	13.2	86	NW			1		5	NW	WN	0	0	Cloudy	M. Cantier.
Puy de Dome (Summit)	25.11	637.7			36.5	2.5	100	W			4		Fog			0.031	0.8	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.04	760.4	29.97	761.2	59.9	15.5	90	W			1		10	W	W	0.08	2.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.64	752.9	29.73	755.1	54.5	12.5	65	WSW			4		10		S	0.287	7.3	Covered	Frere Lucard, Director.
Saint Malo (Port)			29.80	757.0	56.5	13.6	61	WSW			3		5		WNW	0.081	2.05	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.64	752.9	29.81	757.1	54.5	12.5	64	SW			2-3		10	W		0.122	3.1		E. Renou.
Tarbes, Normal School	28.95	735.2	30.01	762.2	59.0	15	79	SW			2		10			0	0	Covered	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.28	743.8	29.99	761.8	58.8	14.9	78	SW			1		10		NW	0	0	Covered	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	82.4	28										0.47	12.		L'Abbé Marchès.
Lyons, Observatory			30.05	763.2	58.6	14.8	65						8			0.154	3.9		
Marseilles, Observatory			29.95	760.6	66.7	19.3	49	NW			3		8			0	0	Cloudy	The Staff.
Mont-Louis	24.88	631.9	30.19	766.9	51.8	11.0	54	E			2		1		SE	0	0		M. Cave.
Nice			29.80	756.8	67.6	19.8	63	NW			6		8			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.52	749.7	29.70	756.7	54.3	12.4	63	SW			6		9		SW	0.252	6.4		Marié Davy, Director
Perpignan			30.03	762.8	65.3	18.5	65	NE	9.3	4.17			8		SW	0.012	0.3		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.53	571.9			37.8	3.2		W			1		9			0	0	Cloudy	Gen'l de Nansouty
Toulouse, Observatory	29.37	746.0	30.10	764.4	57.7	14.3	89	NNW			1		9			0.067	1.70	Raining	B. Bailand.
Tours	29.69	754.2	29.89	759.2	58.3	14.6	58	WSW			6		7		W	0.106	2.7		C. Marquez.
Versailles			29.89	759.0	55.4	13.0	45	SW			3		9			0.218	5.40	Almost cov'd	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.10	764.6	30.12	765.1	53.4	11.6	93	NNW	2.7	1.2		7ck				0.035	0.9	Almost cov'd	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi. (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–12.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.87	733.2	29.70	754.4	50.7	10.4	75	W			4		6	W		0.059	1.5	Raining	Prof. Dr. Hoh.
Berlin	29.43	747.5	29.60	751.8	55.9	13.3	60	SW			4		8			0	0		Prof. Arndt.
Breslau	29.21	741.9	29.73	755.2	55.0	12.8	61	WNW			3		6			0.602	15.29		Royal University Obs'y
Carlsruhe	29.39	746.6	29.82	757.3	54.5	12.5	62	SW			4		5			0.213	5.4	Raining	Albert Sens.
Cassel	29.10	739.0	29.70	754.3	52.9	11.6	63	SW			4		6	SW		0.136	3.40		Dr. H. Möhl.
Crefeld	29.50	749.2	29.66	753.3	53.6	12.0	65	SW			5		8			0.16	4.		Director Lose.
Emden	29.58	751.2	29.61	752.1	51.4	10.8	68	WSW			5		2			0.594	15.1		Prof. Prestel.
Frankfort on the Main	29.42	747.2	29.78	756.4	52.7	11.5		SSW			5		7			0.102	2.6		Physical Society.
Friedrichshafen	28.47	723.0	29.90	759.4	52.9	11.6	68	WNW			9		6	W		0	0		M. Wilhelm.
Hamburg	29.48	748.8	29.55	750.6	52.3	11.3	73	SW			6		10n			0.110	2.8	Squally	Captain F. Hegemann.
Kiel	29.48	748.8	29.50	749.2	51 8	11.0	78	SW			4		10			0.261	6.37		Prof. G. Karsten.
Königsberg, (Prussia)	29.39	746.6	29.48	748.7	56.3	13.5	96	S			2		6			0.059	1.5		Prof. E. Luther.
Köslin			29.53	750.0	52.3	11.3		W			4		4			0.110	2.8		H. Müller.
Leipsic, Observatory	29.30	744.1	29.71	754.7	54.1	12.3	58	SW			5		8	WSW		0	0		Prof. Bruhns.
Memel, Naval School	29.44	747.8	29.49	749.0	56.1	13.4	94	SE			3–4		10n					Rain & fog	Reinbrecht and Skalweit.
Neufahrwasser	29.48	748.9	29.50	749.3	56.1	13.4	87	W			4		10			0.496	12.6		A. Lothes.
Posen	29.41	746.9	29.69	754.2	55.0	12.8	61	NW			6		9			0.390	9.9		Dr. Magener.
Strassburg (in Alsace)	29.33	744.9	29.87	758.8	55.9	13.3	49	WSW			5		5	SW		0.266	6.74		Astronomical Observatory:
Stuttgart	28.86	733.1	29.80	756.9	54.5	12.5	46	W			2		4	W		0.008	0.2	Light rain	Prof. Schoder.
Treves, (Trier)	29.24	742.7	29.76	755.8	52.5	11.4	70	W			6		10			0.069	1.76		Prof. Flesch.
Weissenburg, (Bavaria)	28.32	719.3	29.79	756.6	51.3	10.7	54	W	5.4	2.4			4ck		W	0.008	0.2	Squally	Dr. Von Bebber.
Wustrow, Naval School	29.52	749.9	29.55	750.5	51.3	10.7	74	SW			6		8ks			0.012	0.3		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.55	750.6	29.93	760.3	76.3	24.6		SW			1.0							⅛ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.41	747.0	29.88	758.9	89.6	32.0	32	Calm					0			0	0	Blue sky	
Bombay	29.85	758.2	29.89	759.2	81.0	27.2	91	S	10	4.5			10	SSW	SW	0.18	4.6	Overcast	
Poona	27.87	707.8	29.87	758.7	78.2	25.7	81	S					10		W	0.40	10.2	Overcast	
Lahore	29.07	738.3	29.81	757.2	78.9	26.1	35	Calm	1.3	0.6						0	0	Blue sky	
Belgaum	27.37	695.2	29.94	760.4	70.9	21.6	90	W	1	0.4			9			2.75	69.8	D. clouds	
Roorkee	28.89	733.8	29.79	756.7	77.8	25.4	36	Calm	2	0.9						0	0		
Agra	29.26	743.3	29.82	757.5	86.7	30.4	30	W								0	0		
Nagpur	28.82	731.9	29.86	758.4	79.6	26.4	63	N	1.9	0.8			7		NE	0	0	D. clouds	
Lucknow	29.43	747.4	29.80	756.8	84.5	29.2	26	Calm	1.5	0.7						0	0	Blue sky	
Allahabad	29.50	749.2	29.81	757.1	78.1	25.6	45	Calm	1.8	0.8			0			0	0	Blue sky	
Patna	29.61	752.1	29.79	756.8	80.5	26.9	55	W	2.2	1.0			0			0	0	Blue sky	
Hazaribagh	27.81	706.5	29.82	757.4	79.6	26.4	42	W	3.6	1.6			1			0	0		
Cuttack	29.76	755.8	29.84	757.9	81.1	27.3	71	NNE	0.8	0.4			9					Thunder-storm	
Calcutta (Alipore)	29.79	756.6	29.81	757.2	82.8	28.2	83	SSW	4.0	1.8			0			0	0	Blue sky	
Goalpara	29.38	746.3	29.77	756.1	80.9	27.2	67	SSW	4.0	1.8			0			0	0	Blue sky	
Chittagong	29.74	755.5	29.84	757.8	80.4	26.9	82	W	1.6	0.7			2			0	0	Misty	
Sibsagar	29.51	749.6	29.85	758.2	75.3	24.1	81	ENE	2.2	1.0			10	SSE	SSE	0	0	D. clouds	
Jubbulpore	28.49	723.7	29.85	758.1	85.4	29.7	46	Calm	2.1	0.9			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.39	746.6	29.80	756.9	61.3	16.3	84	SW	2.5	1.1	.....	.....	9	.....	.....	0.201	5.1	.....	Prof. Giovanni Clodig.
Padua	29.67	753.7	29.78	756.5	63.0	17.2	81	S	1.3	0.6	.....	.....	5	WSW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.56	750.7	29.74	755.5	63.9	17.7	80	SSW	0	0	.....	.....	6	N	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.46	722.9	29.78	756.5	59.7	15.4	85	SSW	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.26	743.2	29.77	756.2	57.0	13.9	88	WNW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.87	733.2	29.77	756.2	56.5	13.6	86	NNW	3.8	1.7	.....	.....	9	S	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.86	707.7	29.76	756.0	62.6	17.0	74	NW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.58	751.3	29.80	756.9	68.2	20.1	70	E	.....	.....	2	.....	8	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.62	752.4	29.79	756.6	68.4	20.2	71	SE	10.5	4.7	.....	.....	8	SW	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.48	748.8	29.75	755.6	60.4	15.8	90	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.61	752.2	29.87	758.6	68.9	20.5	65	SW	.....	.....	4	.....	9	SW	.....	0.807	20.5	.....	Cav. F. Meucci
Leghorn	29.74	755.5	29.83	757.6	68.0	20.0	67	SW	23.0	10.3	.....	.....	4	SW	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.75	755.6	29.80	756.8	70.7	21.5	60	S	15.4	6.9	.....	.....	8	.....	.....	0.256	6.5	.....	Prof. Luigi Guidi.
Urbino	28.82	719.2	29.85	758.2	68.7	17.6	61	SW	.....	.....	2	.....	5	.....	.....	0.669	17.0	.....	Prof. P. Serpieri
Rome	29.74	755.5	29.92	759.9	72.0	22.2	67	SW	9.4	4.2	.....	.....	3	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.76	755.9	29.96	760.9	78.4	23.6	57	WSW	.....	.....	4	.....	5	SW	.....	0.441	11.2	.....	Prof. L. Palmieri.
Lecce	29.67	753 6	29.92	759.9	74.8	23.8	63	WNW	4.3	1.9	.....	.....	8	SW	.....	0.012	0.3	.....	Prof. C. De Giorgi.
Cagliari	29.77	756.1	29.96	760.9	75.0	23.9	46	NW	.....	.....	2	.....	8	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.10	739.0	29.96	760.9	74.5	23.6	73	SW	0	0	.....	.....	10	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.75	755.7	30.00	762.0	76.1	24.5	53	WSW	3.1	1.4	.....	.....	6	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.89	759.3	29.97	761.1	74.1	23.4	72	SE	4.9	2.2	.....	.....	10	WSW	.....	0	0	.....	Prof. V. Giuliaro.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.67	753.6	29.87	758.7	68.8	20.4	77	NE	10.8	4 8	.....	.....	9s	.....	.....	0	0	Cloudy.....	I. Arai, Director.
Tokei (Yeddo) Observatory	29.66	753.3	29.72	754.9	62.3	16.8	99	N	2.0	0.9	.....	0	0	.....	.....	0.355	9.02	Foggy.....	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. E. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	57.2	14.0	58	N	.....	.....	4	0	0	.....	.....	0	0	Clear.....	P. Ceballos.
Guadalajara	25.18	639.6	30.36	771.1	45.5	7.5	57	SW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	Prof. L. Perez.
Leon	24.53	623.2	30.17	766.3	51.8	11.0	80	SW	.....	.....	2	0	0	.....	.....	0	0	Blue sky.....	Prof. M. Leal.
Mexico	23.21	589.5	30.41	772.5	44.2	6.8	82	Calm	0	0	.....	0	0k	.....	.....	0	0	Cloudy.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	46.9	8.3	85	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, M. E.
Tlacotalpam	29.917	759.77	29.927	760 01	71.4	21.9	86	W	.....	.....	3	0	10	.....	N	0.173	4.4	Covered.....	M. M. Cházaro.
San Luis Potosi	24.30	616.5	30.28	769.0	42.0	5.6	71	ESE	.....	.....	1	2	0	N	.....	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.19	766.8	30.22	767.5	76.1	24.5	53	NW	12.2	5.5	.....	3ck	4sk	.....	.....	Inap	Inap.	Cloudy.....	Prof. J. Rossell.
Zacatecas	22.63	575.5	30.30	769.6	48.2	9	52	SSE	.....	.....	1	0	0	.....	.....	0	0	Blue sky.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.35	593.2	30.11	765.0	43.7	6.5	52	N	4.5	2.0	.....	0	0	.....	.....	0	0	Clear.....	Prof. P. Spina.
Durango	24.28	616.8	30.20	767.0	52.6	11.4	81	NNW	.....	.....	2	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, C. E.
Colima	28.43	722.2	30.07	763.7	77.7	25.4	79	NE	.....	.....	1	0	2	.....	SE	0	0	Clear.....	R. Banda, C. E.
San Juan E. Michapam	29.94	760.4	30.08	764.1	70.7	21.5	.....	Calm	.....	.....	0	0c	4n	.....	N	0.071	1.8	Covered.....	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,486 m., or 8,158.5 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.61	752.2	29.61	752.2	50.7	10.4	.....	SSW	.....	.....	5	.....	.....	.....	.....	0.205	5.2	.....	
Groningen	29.47	748.6	29.53	750.0	51.8	11.0	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.535	13.6	.....	
Helder	29.50	749.2	29.50	749.2	52.7	11.5	.....	SW	.....	.....	4	.....	.....	.....	.....	0.051	1.3	.....	
Hellevoetsluis	29.58	751.3	29.58	751.3	50.4	10.2	84	SW	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.55	750.6	29.60	751.8	49.6	9.8	78	SW	.....	.....	4	.....	5	.....	.....	0.051	1.3	Cloudy.....	H. v d Broek.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.11	739.3	29.16	740.7	49.6	9.8	66	SSE	6.0	2.7	.....	.....	8	.....	.....	0.142	3.6	.....	
Brönö	29.25	742.9	29.29	743.9	56.1	13.4	62	E	18	8	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.02	737.0	29.16	740.6	52.0	11.1	94	SW	7	3	.....	.....	10	.....	.....	1.201	30.5	Light rain ...	
Tromsö	29.48	748 7	29.52	749.8	39.2	4.0	84	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.98	761.4	30.17	766.2	65.8	18.8	84	NE	1.3	0.6	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.14	740.2	30.16	766.1	63.3	17.4	74	SW	1.8	0.8	.....	.....	10	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.09	764.3	30.18	766.5	72.3	22.4	58	SW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	757.0	30.16	766.1	62.8	17.1	79	SW	9.8	4.4	.....	.....	10	.....	.....	Inap.	Inap.	.....	The Staff.
Ponta Delgada, (Azores)	30.14	765.5	30.21	767.3	68.7	20.4	64	SSE	7.4	3.3	.....	.....	4	ENE	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 7 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 53′ W. 23° 34′	.....	.....	3	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M T. Guimaraes, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.17	740.8	29.58	751.3	58.5	14.7	91	WSW	7	3	.....	.....	10n	.....	.....	.....	.....	Light rain...	Astronomical Obs.
Wilna	29.21	742.0	29.62	752.4	60.3	15.7	82	SSE	4	2	.....	.....	8	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.45	748.0	29.69	754.1	54.7	12.6	96	ESE	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.72	755.0	29.74	755.4	52.0	11.1	94	SE	4	2	.....	.....	10n	.....	.....	.....	.....	Light fog....	Central Physical Obs.
Kieff	29.17	740.9	29.79	756.7	60.1	15.6	76	S	9	4	.....	.....	10ks;nc	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.86	758.4	29.93	760.2	66.6	19.2	63	S	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.97	761.2	29.99	761.7	68.4	20.2	70	SSE	4	2	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.44	747.8	29.98	761.6	59.5	15.3	71	S	9	4	.....	.....	6ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.82	757.4	30.02	762.5	64.6	18.1	46	ESE	18	8	.....	.....	4ck	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.71	754.7	29.73	755.2	44.4	6.9	98	ESE	9	4	.....	.....	10	.....	.....	.....	.....	Raining.....	Capt. Sseliwerstow.
Tiflis	28.70	729.1	30.11	764.8	62.4	16.9	66	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.29	769.3	30.23	767.2	60.6	15.9	39	ESE	7	3	.....	.....	8cs;s	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	30.05	763.2	30.33	770.3	42.8	6.0	63	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.48	748.9	30.61	774.9	26.4	— 3.1	63	Calm	0	0	.....	.....	1cs	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Nukuss	29.98	761.5	30.21	767.4	57.6	14.2	47	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.57	725.7	30.32	770.2	46.0	7.8	75	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.41	747.0	29.97	761.1	20.3	— 6.5	97	NW	9	4	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Yeniseisk	29.72	754.9	30.03	762.8	17.4	— 8.1	79	N	2	1	.....	.....	.....	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.98	761.4	30.12	765.0	55.6	13.1	72	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.68	753 9	29.77	756.1	40.6	4.8	89	W	2	1	.....	.....	8n	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds: occasionally, the weather by the Vienna symbols: they omit the rain-fall. The elevation of Tiflis is 469 meters, or 1,541.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.89	759.2	29.99	761.8	68.0	20	67	E	2.1	0.94	.....	.....	4k	.....	.....	0.013	0.23	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.02	762.5	30.08	763.9	59.9	15.5	86	NW	1.5	0.67	.....	.....	10	.....	.....	0.189	4.8	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.11	688.5	.....	.....	60.1	15.6	79	SW	10.6	4.72	.....	.....	8	.....	.....	0	0	Cloudy.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.88	708.1	30.08	764.1	62.8	17.1	71	SW	3.0	1.33	.....	0	9	.....	.....	0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.92	760.0	30.07	763.7	77.0	25.5	49	NE	1.4	0.61	.....	.....	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.16	740.7	30.06	763.4	58.1	14.5	81	SW	5.6	2.50	.....	.....	10	.....	.....	0.244	6.2	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	29.91	759.6	29.97	761.3	77.3	25.2	73	NNW	10.1	4.5	.....	.....	8kn	.....	NNW	Inap.	Inap.	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.05	763.3	30.15	765.8	67.8	19.9	81	W	3.7	1.7	.....	0	4	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W.I.	29.84	757.8	29.93	760.1	82.8	28.2	86	E	4.1	1.83	.....	2kn	4k	E	E	0	0	Cloudy ..	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.5	29.71	754.5	44.2	6.8	.....	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	
Umea	29.56	750.7	29.61	752.0	47.1	8.4	94	SE	.....	.....	2	.....	10	.....	.....	0.205	5.2	.....	
Hernosand	29.40	746.8	29.45	748.1	48.9	9.4	98	SE	.....	.....	4	.....	10	.....	.....	0.272	6.9	Raining	
Stockholm	29.24	742.6	29.41	747.1	53.6	12.0	98	SSE	.....	.....	4	.....	10	.....	.....	0.449	11.4	Foggy	
Wisby	29.32	744.8	29.38	746.3	56.5	13.6	94	SSE	.....	.....	6	.....	10	.....	.....	0.035	0.9	Raining	
Sub-Series.																			
Upsala	29.31	744.4	29.38	746.3	54.3	12.4	99	SE	.....	.....	.....	.....	10	.....	.....	0.376	9.55	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.56	725.3	29.97	761.3	57.2	14.0	53	SSW	.....	.....	2	.....	9	.....	.....	0.205	5.2	Covered	The Observatory.
Zurich	28.30	718.8	29.94	760.5	52.9	11.6	66	W	.....	.....	4	.....	4	.....	.....	0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.8 mm.; Thermometer, +2.7 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.86	758.5	71.6	22.0	61	SE	7	3.0	.....	.....	9	.....	WSW	0.020	0.5	.....	The Observatory.
Valona	.....	.....	30.04	762.9	76.3	24.6	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.90	759.4	30.02	762.4	81.0	27.2	46	W	.....	.....	1	.....	5c;s	.....	SW	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.16	766 6	30.24	768.1	34.7	1.5	88	Calm	0	0	.....	.....	10n	.....	.....	0.22	5.6	Overcast	Hon. J. Ferguson.
Brockville, Ontario	29.49	749.0	29.79	756.7	50	10.0	.....	SE	5	2.2	.....	.....	8s	.....	SE	0	0	Cloudy	W. R. Bigg.
*Chatham, N B	30.19	766.8	30.26	768.6	40	4.4	96	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.18	766.6	30.22	767.6	47	8.3	82	E	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.61	752.1	29 81	757.2	44.1	6.7	96	NE	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.04	763.0	30.20	767.1	41	5.0	91	W	.....	.....	1	.....	.....	.....	.....	0	0	Overcast	H. A. Johnson.
Esquimault, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. H. Bevis.
*Father Point, Quebec	30.09	764.3	30.12	765.0	45	7.2	80	E	10	4.5	.....	0	0	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B	30.15	765.8	30.22	767.6	39.0	3.9	90	E	3	1.3	.....	.....	10s	.....	.....	0	0	Threatening	Prof. Harrison.
*Fort Garry Manitoba	28.90	734.0	29.76	755.9	26	— 3.3	96	N	10	4.5	.....	5k	5ks	N	N	0.130	3.30	Cloudy	James Stewart.
Granton, Ontario	28.69	728.7	29.80	756.9	41	5.0	.....	NE	.....	.....	2	.....	10n	.....	.....	0.60	1.52	Light rain	James Grant.
*Halifax, N. S	30.05	763.3	30.19	766.8	41	5.0	95	N	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.42	747.3	29.79	756.7	47.7	8.7	80	NE	.....	.....	1	10cs	0	.....	.....	0.50	12.7	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	29.90	761.0	29.98	761.5	44	6.7	92	NE	.....	.....	6	.....	10	.....	.....	0.39	9.9	Raining	E. Weedon.
*Kingston, Ontario	29.44	747.8	29.77	756.1	53	11.7	65	NE	3	1.3	.....	.....	10ks	.....	SE	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.17	766.3	30.21	767.3	48.6	9.2	90	NE	8	3.6	.....	8k	0	NE	.....	0	0	Cloudy	C. H. Rigby.
*Montreal, Quebec	29.68	753.9	29.87	758.7	51	10.6	75	N	8	3.6	.....	.....	8ks	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.15	740.4	29.85	758.2	43	6.1	100	W	2	0.9	.....	.....	10n	.....	W	0.60	15.2	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.01	736.8	29.75	755.6	50.7	10.4	93	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Lightning	J. F. Jeffers, B. A.
Port Dover, Ontario	29.03	737.3	29.72	754.9	46	7.8	100	N	16	7.2	.....	.....	10n	.....	N	0.53	13.5	Light rain	H. Morgan.
Port Hastings, N. S	30.16	766.1	30.21	767.3	44.3	6.8	.....	NE	3	1.3	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.14	740.1	29.79	756.7	43	6.1	92	N	8	3.6	.....	.....	10n	.....	N	0.85	21.6	Light rain	M. Payne.
*Quebec, Quebec	29.70	754.4	30.03	762.7	46	7.8	88	E	.....	.....	5f	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.33	745.0	29.79	756.7	47	8.3	96	Calm	0	0	.....	10cs	0	SW	.....	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.09	764.8	30.14	765.5	49	9.4	87	E	6	2.7	.....	2k	2ks	SE	.....	0	0	Fair	Dr. Gove.
St. John, N. B	30.03	762.7	30.20	767.1	39	3.9	100	E	4	1.8	.....	.....	10ks	.....	.....	0	0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.15	740 4	29.87	758.7	42	5.6	83	N	25	11.2	.....	.....	10ks	.....	N	0.60	15.2	Light rain	K. Stewart.
Stayner, Ontario	29.03	737.3	29.82	757.4	44	6.7	96	NW	9	4.0	.....	.....	10n	.....	NW	0.82	20.8	Light rain	R. J. Cole.
Stratford, Ontario	28.60	723.9	29.79	756.7	41.0	5.0	95	NW	8.0	3.6	.....	.....	10s	.....	.....	0.866	21.99	Raining	C. J. MacGregor, M.
*Sydney, C. B	30.17	766 3	30.21	767.3	48	8.9	84	N	9	4.0	.....	.....	10ks	.....	N	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.37	746.0	29.75	755.6	48	8.9	88	N	21	9.4	.....	.....	10n	.....	SE	0.075	1.91	Light rain	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.57	751.1	29.79	756.7	49	9.4	82	E	4	1.8	.....	.....	10n	.....	E	Inap.	Inap.	Light rain..	
Alpena, Michigan	29.26	743.2	29.92	760.0	36	2.2	90	NW	6	2.7	.....	2cs	0	W	.....	0.10	4.8	Fair	
Atlanta, Georgia	28.70	729.0	29.87	758.7	41	5.0	57	NW	32	14.3	.....	0	1s	.....	Calm	0.73	18.5	Clear	
Atlantic City, New Jersey	29.35	745.5	29.36	745.7	65	18.3	94	E	40	17.9	.....	.....	10n	.....	Calm	1.07	27.2	Heavy rain..	
Augusta, Georgia	29.58	751.3	29.76	755.9	47	8.3	85	W	7	3.1	.....	.....	10s	.....	W	0.31	7.9	Cloudy	
Baltimore, Maryland	28.78	731.0	28.83	732.3	62	16.7	100	E	29	13.0	.....	.....	10n	.....	SE	2.74	69.6	Light rain...	
Barnegat, New Jersey	29.34	745.2	29.36	745.7	63	17.2	100	SE	60	26.8	.....	.....	10n	.....	SE	0.48	12.2	Light rain...	
Bismarck, Dakota	28.19	716.0	30.04	763.0	30	— 1.1	78	NW	20	8.9	.....	2cs	Sm'e	NW	.....	0	0	Clear	
Boerne, Texas	28.70	729.0	.....	.....	54	12.2	61	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.27	692.8	30.23	767.8	45	7.2	76	NW	1	0.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy.	
Boston, Massachusetts	29.84	757.9	29.99	761.7	52.5	11.4	90	E	14	6.3	.....	.....	10s;sn	.....	SE;Calm	0	0	Threatening	
Brackettville, Texas	28.99	736.3	30.04	763.0	49	9.4	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	28.86	733.0	29.88	758.9	31	— 0.6	79	W	12	5.4	.....	2cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.17	766.3	30.24	768.1	56	13.3	57	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	28.96	735.6	29.64	752.8	51	10.6	100	N	13	5.8	.....	.....	10n	.....	N	0.25	6.3	Light rain...	
Burkes, Arizona	.....	.....	.....	.....	55	12.8	12	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.66	753.4	29.91	759.7	55	12.8	56	SE	4	1.8	.....	10ck	0	Calm	.....	0	0	Cloudy	
Cairo, Illinois	29.63	752.6	30.04	763.0	40	4.4	73	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	24.61	625.8	29.64	752.8	35	1.7	52	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.38	644.6	30.18	766 6	59	15.0	18	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.85	682.0	30.34	770.6	40	4.4	56	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Camro, California	27.46	697.5	30.03	762.7	33	0.6	69	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.53	750.0	29 54	750.3	70	21.1	85	SW	14	6.3	.....	.....	10n	.....	SW	3.77	95.8	Light rain...	
Cape Henry, Virginia	29.31	744.5	29.34	745.2	65	18.3	84	SW	20	8.9	.....	.....	10n	.....	SW	2.69	68.3	Light rain...	
Cape Lookout, N. Carolina	29.51	749.5	29.52	749.8	68	20.0	84	W	26	11.6	.....	.....	10s	.....	SW	3.92	99.6	Cloudy	
Cape May, New Jersey	29.20	741.7	29.23	742.4	67	19.4	90	SE	52	23.3	.....	.....	10n	.....	Calm	2.25	57.1	Light rain...	
Castroville, Texas	29.38	746.2	30.12	765.0	40	4.4	65	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	29.63	752.6	29.69	754.1	56	13.3	94	W	17	7.6	.....	.....	10s	.....	W	0.72	18 3	Threatening	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	35	1.7	90	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Threatening	
Chicago, Illinois	29.33	745.0	30.04	763.0	40	4.4	65	SW	1	0.4	.....	.....	Fog	.....	.....	0	0	Foggy	
Cincinnati Ohio	29.30	744.2	29.97	761.2	40	4.4	65	NW	8	3.6	.....	1k	0	NW	.....	0.23	5.8	Clear	
Cleveland, Ohio	29.03	737.3	29.75	755.6	49	9.4	85	NW.	28	12.5	.....	.....	10n	.....	N	1.56	39.6	Heavy rain..	
Coleman City, Texas	28.28	718.3	30.00	762.0	42	5.6	58	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	28.96	735.6	29.80	756.9	37	2.8	80	NW	12	5.4	.....	.....	10s	.....	NW	0.64	16.3	Cloudy	
Concho, Texas	28.17	715.5	29.86	758.4	46	7.8	34	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.65	753.1	30.13	765.3	50	10.0	45	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.26	743.2	29.90	759.4	44	6.7	76	S	4	1.8	.....	9k	0	Calm	.....	0	0	Cloudy	
Decatur, Texas	28.91	734.3	30.09	764.3	51	10.6	34	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.26	743.2	30.06	763.5	53	11.7	42	S	14	6.3	.....	0	2s	.....	.....	0	0	Fair	
Denver, Colorado	24.81	630.2	30.03	762.7	40	4.4	56	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.00	736.6	29.87	758.7	50	10.0	72	NW	6	2.7	.....	.....	10s	.....	NW	0	0	Cloudy	
Detroit, Michigan	29.18	741.2	29.85	758.2	38	3.3	81	N	11	4.9	.....	2cs	5s	SW	Calm	0.45	11.4	Fair	
Dodge City, Kansas	27.34	694.4	29.64	752.8	44	6.7	68	NE	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.18	741.2	29.88	758.9	42	5.6	68	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.11	739.4	29.80	756.9	37	2.8	63	SW	2	0.9	.....	0	5s	.....	Calm	0	0	Fair	
Eagle Pass, Texas	29.36	745.7	30.13	765.3	43	6.1	75	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	30.11	764.8	30.18	766.6	47	8.3	85	E	10	4.5	.....	0	8s	.....	E	0	0	Fair	
Edinburg, Texas	.....	.....	.....	.....	45	7.2	62	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	51	10.6	40	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	28.94	735.1	29.64	752.8	51	10.6	100	N	23	10.3	.....	.....	10n	.....	Calm	1.56	39.6	Heavy rain.	
Escanaba, Michigan	29.29	744.0	29.97	761.2	30	—1.1	78	NW	1	0.4	.....	5ck	0	NW	.....	0	0	Fair	
Florence, Arizona	28.48	723.4	30.08	764.0	55	12.8	33	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	
Fort Craig, New Mexico	25.64	651.2	29.70	754.4	34	1.1	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.27	641.8	30.23	767.8	56	13.3	26	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.45	748.0	29.99	761.7	48	8.9	56	SE	6	2.7	.....	0	Sm'e	.....	SE	0	0	Smoky	
Fort Griffin, Texas	28.74	730.0	30.01	762.2	55	12.8	28	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.83	706.9	29.74	755.4	55	12.8	22	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.77	730.7	29.91	759.7	40	4.4	56	S	5	2.2	.....	0	0	.....	.....	0	1	Clear	
Fredericksburg, Texas	28.38	720.8	29.93	760.2	62	16.7	18	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.11	764.8	30.15	765.8	61	16.1	62	N	2	0.9	.....	Haze	0	Calm	.....	0	0	Clear	
Graham, Texas	28.96	735.6	30.04	763.0	42	5.6	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.29	744.0	29.96	761.0	34	1.1	79	E	1	0.4	.....	0	0	.....	.....	0.12	3.0	Clear	
Indianapolis, Indiana	29.18	741.2	29.98	761.5	37	2.8	63	Calm	0	0	.....	0	0	.....	.....	0.28	7.1	Clear	
Indianola, Texas	30.19	766.8	30.22	767.6	55	12.8	68	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	28.88	733.5	30.01	762.2	52	11.1	29	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	29.84	757.9	29.86	758.4	56	13.3	63	NW	16	7.2	.....	5k	0	NW	.....	Inap.	Inap.	Fair	
Keokuk, Iowa	29.26	743.2	29.88	758.9	44	6.7	76	S	4	1.8	.....	.....	9s	.....	NW	0	0	Cloudy	
Key West, Florida	29.94	760.5	29.97	761.2	73	22.8	72	NW	29	13.0	.....	10c;k	0	sw;nw	.....	0.01	0.3	Cloudy	
Kittyhawk, North Carolina	29.44	747.8	29.46	748.3	66	18.9	100	SW	27	12.1	.....	.....	10n	.....	SW	2.61	66.3	Light rain...	
Knoxville, Tennessee	28.93	734.8	29.96	761.0	38	3.3	72	N	9	4.0	.....	1k	0	N	.....	2.02	51.3	Clear	
La Crosse, Wisconsin	29.10	739.1	29.84	757.9	43	6.1	74	S	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.18	665.0	30.33	770.4	34	1.1	61	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.74	755.4	30.09	764.3	49	9.4	64	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.81	630.2	30.08	764 0	29	—1.7	89	N	3	1.3	.....	.....	10s	.....	Calm	0.41	10.4	Cloudy	
Leavenworth, Kansas	29.01	736.8	29.86	758.4	43	6.1	59	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Los Angeles, California	29.61	752.1	29.94	760.5	58	14.4	42	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.42	747.3	30.00	762.0	37	2.8	71	NW	9	4.0	.....	0	Sm'e	.....	NW	0.34	8.6	Smoky	
Lynchburg, Virginia	28.72	729.5	29.36	745.7	60	15.6	70	NW	8	3.6	.....	.....	10n	.....	Calm	2.25	57.1	Light rain...	
Madison, Wisconsin	28.90	734.0	29.90	759.4	40	4.4	65	S	9	4.0	.....	.....	8ks	.....	W	0	0	Cloudy	
Marquette, Michigan	29.19	741.4	29.91	759.7	33	0.6	70	SW	12	5.4	.....	5k	0	SW	.....	0	0	Fair	
Mason, Texas	28.46	722.9	30.30	769.6	37	2.8	80	Calm	0	0	.....	Haze	Haze	Calm	.....	0	0	Hazy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.18	741.2	29.93	760.2	35	1.7	70	W	3	1.3	.....	8ck	Fog	Calm	.....	0	0	Cloudy	
Mobile, Alabama	30.13	765.3	30.18	766.6	42.5	5.8	79	NW	4	1.8	.....	0	0	.....	.....	0.03	0.8	Clear	
Montgomery, Alabama	29.85	758.2	30.10	764.5	39	3.9	81	NW	9	4.0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Morgantown, West Virginia	28.44	722.4	29.46	748.3	51	10.6	93	W	15	6.7	.....	.....	10n	.....	W	1.72	43.7	Light rain..	
Mt. Washington, N. H.	23.77	603.8	30.13	765.3	37	2.8	71	SE	63	28.1	.....	10s	5ks	Calm	SE	0	0	Cloudy	
Nashville, Tennessee	29.55	750.6	30.10	764.5	36	2.2	80	W	4	1.8	.....	0	Sm'e	.....	Calm	0.51	13.0	Smoky	
New Haven, Connecticut	29.59	751.6	29.70	754.4	60	15.6	88	NE	22	9.8	.....	.....	10n	.....	E	0.01	0.3	Light rain...	
New London, Connecticut	29.75	755.6	29.80	756.9	59	15.0	94	E	27	12.1	.....	.....	10 n	.....	E	0.03	0.8	Light rain...	
New Orleans, Louisiana	30.15	765.8	30.21	767.3	52	11.1	73	NW	4	1.8	.....	0	Haze	.....	Calm	0.02	0.5	Clear	
Newport, Rhode Island	29.84	757.9	29.88	758.9	58	14.4	94	E	12	5.4	.....	.....	10n	.....	SE	0.01	0.3	Light rain...	
New York, New York	29.33	745.0	29.50	749.3	60	15.6	100	NE	45	20.1	.....	.....	10n	.....	NE	0.23	5.8	Light rain...	
Norfolk, Virginia	29.34	745.2	29.40	746.7	63	17.2	94	SW	21	9.4	.....	.....	10n	.....	SW	2.83	71.9	Light rain...	
North Platte, Nebraska	27.13	689.1	29.71	754.6	44	6.7	80	NW	8	3.6	.....	.....	10s	.....	NW	0	0	Cloudy	
Olympia, Washington Ter.	30.40	772.1	30.44	773.2	37	2.8	100	S	2	0.9	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Omaha, Nebraska	28.81	731.8	29.88	758.9	50	10.0	72	S	8	3.6	.....	0	2s	.....	Calm	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.46	748.3	29.77	756.1	54	12.2	62	SE	8	3.6	.....	.....	10n	.....	.....	0.10	2.5	Light rain...	
Pembina, Dakota	28.92	734.6	29.77	756.1	30	— 1.1	89	NW	12	5.4	.....	.....	10n	.....	Calm	Inap.	Inap.	Light snow..	
Philadelphia, Pa	29.16	740.7	29.21	741.9	65	18.3	89	SE	72	32.2	.....	.....	10ks	.....	SE	0.94	23.9	Cloudy.....	
Phœnix, Arizona	28.88	733.3	.....	.....	57	13.9	31	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.88	462.2	30.04	763.0	17	— 8.3	57	NW	16	7.2	.....	5ck	0	Calm	.....	0	0	Fair	
Ploche, Nevada	24.15	613.4	29.92	760.0	42.5	5.8	50	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Pittsburg, Pennsylvania	28 71	729.2	29.48	748.8	53	11.7	93	N	12	5.4	.....	.....	10n	.....	N	1.28	32.5	Light rain...	
Port Huron, Michigan	29.16	740.7	29.83	757.7	41	5.0	82	N	13	5.8	.....	.....	10s	.....	N	0.76	19.1	Cloudy.....	
Portland, Maine	30.02	762.5	30.08	764.0	49	9.4	93	E	9	4.0	.....	.....	10s	.....	E	0	0	Cloudy.....	
Portland, Oregon	30.42	772.7	30.53	775.4	41.0	5.0	91	SE	5	2.2	.....	.....	10s	.....	Calm	0.27	6.9	Cloudy.....	
Prescott, Arizona	24.80	632.2	30.25	768.3	36	2.2	53	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Pilot Point, Texas	29.30	744.2	30.14	765.5	46	7.8	54	N	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Punta Rassa, Florida	29.07	761.2	29.99	761.7	67	19.4	60	NW	32	14.3	.....	2k	0	NW	.....	0	0	Clear.....	
Red Bluff, California	29.71	754.6	30.07	763.8	60	15.6	55	N	3	1.3	.....	0	0	.....	.....	0	0	Clear.....	
Rio Grande City, Texas	30.04	763.0	30.27	768.8	51	10.6	79	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	
Rochester, New York	29.09	738.9	29.69	754.1	52	11.1	93	E	7	3.1	.....	.....	10n	.....	Calm	0.24	6.1	Light rain...	
Roseburg, Oregon	29.89	759.2	30.49	774.4	42.5	5.8	87	N	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Sacramento, California	29.97	761.2	30.05	763.3	53	11.7	73	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.42	747 8	29.98	761.7	44	6.7	68	S	8	3.6	.....	0	0	.....	.....	0	0	Clear.....	
St. Marks, Florida	29.99	761.7	30.01	762.2	43	6.1	61	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.....	
St. Paul, Minnesota	28.88	736.1	29.82	757.4	41	5.0	65	NW	8	3.6	.....	.....	10ks	sn	NW	0	0	Cloudy.....	
Salt Lake City, Utah	25.69	652.5	30.02	762.5	47.0	8.3	48	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
San Antonio, Texas	29.49	749.0	30.10	764.5	44	6.7	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	
San Diego, California	29.87	758.7	29.95	760.7	62	16.7	36	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear.	
Sandusky, Ohio	29.17	740.9	29.84	757.9	42	5.6	83	N	35	15.6	.....	.....	10s	.....	N	0.90	22.9	Threatening	
Sandy Hook, New Jersey	29.44	747.8	29.47	748.5	61	16.1	100	E	60	26.8	.....	.....	10n	.....	E	0.45	11.4	Heavy rain..	
San Francisco, California	29.99	761.7	30.05	763.3	61	16.1	71	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear.....	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	37	2.8	38	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Savannah, Georgia	29.69	754.1	29.78	756.4	62	11.1	79	W	18	8.0	.....	.....	10s	.....	W	0.12	3.0	Cloudy.....	
Shréveport, Louisiana	29.94	760.5	30.17	766.3	46	7.8	77	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear.....	
Silver City, New Mexico	24.38	619.2	.....	.....	40	4.4	32	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.....	
Smithville, North Carolina	29.52	749.8	29.55	750.6	64	17.8	89	NW	8	3.6	.....	0	8n	.....	S	4.32	109.7	Light rain...	
Springfield, Massachusetts	29.74	755.4	29.87	758.7	56	13.3	81	E	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
Stockton, Texas	27.03	686.6	30.03	762.7	43	6.1	51	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.....	
Thatcher's Island, Mass	29.97	761.2	30.02	762.5	53	11.7	93	E	21	9.4	.....	.....	10s	.....	SE	0	0	Threatening	
Toledo, Ohio	29.20	741.7	29.88	758.9	38	3.3	72	NW	12	5.4	.....	0	8s	.....	NW	0.33	8.4	Cloudy.....	
Tucson, Arizona	.....	.....	.....	.....	59	15.0	32	W	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.72	754.9	29.76	755.6	51	10.6	86	W	18	8.0	.....	.....	10ks	.....	W	0.52	13.2	Cloudy.....	
Umatilla, Oregon	29.98	761.5	.....	.....	37.5	3.1	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.....	
Unalashka, Aleutian Islands	.....	.....	.....	.....	45	7.2	100	SE	.....	.....	7	.....	10n	.....	SE	0.07	1.8	Raining... ...	
Uvalde, Texas	29.26	743.2	30.10	764.5	42	5.6	50	S	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Vicksburg, Mississippi	29.95	760.7	30.22	767.6	44	6.7	84	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.22	615.2	29.70	754.4	34	1.1	70	Calm	0	0	.....	.....	10s	.....	W	0.06	1.5	Cloudy.....	
Visalia, California	29.72	754.9	30.09	764.3	48	8.9	93	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	28.76	730.2	28.86	733.0	59	15.0	100	NW	30	13.4	.....	.....	10n; fg	.....	NW	3.44	87.4	Light rain...	
Wickenburg, Arizona	.....	.....	.....	.....	47	8.3	62	N	.....	.....	1	0	0	.....	.....	0	0	Clear.....	
Wilmington, N. Carolina	29.45	748.0	29.63	750.0	63	17.2	94	W	8	3.6	.....	.....	10s	.....	W	2.96	75.2	Cloudy.....	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	35	1.7	61	SW	8	3.6	.....	0	1s	.....	Calm	0	0	Clear.	
Wood's Holl, Mass	29.89	759.2	29.94	760.5	58	14.4	87	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Threatening	
Yankton, Dakota	28.74	730.0	30.05	763.3	40	4.4	82	NW	3	1.3	.....	8cs	0	NW	.....	0.04	1.0	Fair	
Yuma, Arizona	29.77	756.1	29.93	760.2	59	15.0	44	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.....	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.94	760.5	29.99	761.7	17.0	— 8.3	92	N	11	4.9	.....	1c	0	NW	.....	0	0	Fair.....	J. Fortescue, W. Wood.
Havana, Cuba, W. I	29.95	760.7	29.97	761.2	78	25.6	72	NW	19.2	8.6	.....	4c	8n	NW	N	0	0	Cloudy.....	Chas. Rassebrink.
Santiago de Cuba, W. I	29.89	759.2	29.92	760.0	77	25.0	86	Calm	.....	.....	0	8c	0	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	85	29.4	79	E	5	2.2	.....	2c	2ks	NE	.....	0	0	Clear.....	G. O. Gellich.
Kingston, Jamaica, W. I	30.06	763.5	30.07	763.8	79	26.1	90	Calm	0	0	.....	8c	0	Calm	.....	0.15	3.8	.....	James Gall.
Navassa, W. I	29.83	757.7	29.91	759.7	83	28.3	.....	NE	10.9	4.9	.....	.....	.....	.....	.....	0	0	Partly cl'dy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.97	761.2	29.98	761.5	84	28.9	75	NE	.....	.....	3	5k	6ks	E	.....	0	0	Fair.....	C. J. Hering
Medellin, Colombia, S. A	25.22	640.6	.....	.....	65.0	18.3	87	Calm	0	0	.....	.....	10s	.....	.....	0.01	0.3	.....	Thomas Herran.
Portland, Jamaica, W. I	29.78	756.1	30.04	763.0	77	25.0	90	E	.....	.....	.....	c	.....	.....	.....	.....	.....	Fair	Robert Elworthy.
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NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,696 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.18	766.6	47	8.3	47	8.3	85	NW	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
NavyYard,Portsmouth,N.H	30.04‡	763.0‡	.....	.....	50	10.0	58	NE	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan	29.74*	755.4*	67	19.4	64	17.8	89	Calm	.....	.....	0	.....	10n	.....	NNE	0.27	6.9	.....	.....	Light rain...	
Adams. Valparaiso, Chili	30.04	763.0	62	16.7	58	14.4	88	NW	.....	.....	1	.....	2	.....	N;W	.....	.....	Smooth	.....	Fair.....	
Alaska. Callao, Peru	30.12	765.0	68	20.0	61	16.1	88	SSE	.....	.....	1	.....	10	.....	SE	0	0	Smooth	.....	Hazy.....	
Alliance, Smyrna, Turkey	30.03‡	762.7‡	.....	.....	76	24.4	54	SSE	.....	.....	1	.....	8	.....	Calm	.....	.....	.....	.....	Overcast.....	
Ashuelot. Nagasaki, Japan	29.90	759.4	72	22.2	70	21.1	80	NE	.....	.....	4	.....	8	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La	30.12	765.0	43	6.1	56	13.3	94	SW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.	29.52‡	749.8‡	.....	.....	60	15.6	94	ENE	26	11.6	.....	.....	10	.....	.....	0.25	6.3	.....	.....	Rainy.....	
Constitution, Havre, France	.....	.....	.....	.....	53	11.7	93	SW	.....	.....	4	.....	6	.....	NE	.....	.....	.....	.....	Cloudy.....	
Despatch, Constantinople, Turkey	29.89‡	759.2‡	.....	.....	72	22.2	71	Calm	.....	.....	0	.....	8	.....	SW	.....	.....	.....	.....	Cloudy.....	
Essex, Cape Town	29.80	756.9	61	16.1	61	16.1	94	NNW	.....	.....	6	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.	29.47	748.5	70	21.1	64	17.8	100	SW	18	8.0	.....	.....	10	.....	SW	1.96	49.8	.....	.....	Cloudy.....	
Gettysburg N. 31° 50′, E. 34° 00′	29.96‡	761.0‡	.....	.....	78	25.6	96	NNW	.....	.....	2	.....	2	.....	.....	0	0	Smooth	E	D. clouds.....	
Guard. N 10° 45′, W. 43° 58′	29.91	759.7	83	28.3	83	28.3	83	ENE	.....	.....	5	.....	8	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Hartford, St. Catherine Strait	30.10	764.5	72	22.2	71	21.7	85	SW	2.4	1.1	.....	.....	10	.....	.....	0	0	Smooth	.....	Cloudy.....	
Marion, N. 45° 00′, E. 13° 28′	29.79	756.7	69	20.6	70	21.1	70	SW	.....	.....	1	.....	2	.....	SW	Mod'ate	Mod'ate	Smooth	.....	Fair	
Michigan, Erie, Pa	29.83†	757.7†	.....	.....	53	11.7	80	NE	.....	.....	7	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Monocacy. Yokohama, Japan	29.71‡	754.6‡	.....	.....	67	19.4	89	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	.....	.....	Raining.....	
New Hampshire, Port Royal, S. C.	29.84	757.9	54	12.2	50	10.0	??	W	31	13.9	.....	.....	8	.....	W	0.8	20.	.....	.....	Cloudy.....	
Onward, Callao, Peru	30.10†	764.5†	.....	.....	63	17.2	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	30.16	766.1	59	15.0	55	12.8	80	SSE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Passaic, Washington, D. C.	.....	.....	.....	.....	63	17.2	83	WNW	.....	.....	8	.....	10	.....	E	.....	.....	.....	.....	Cloudy.....	
Plymouth. St. Thomas, W. I.	30.09	764.3	84	28.9	84	28.9	91	E	.....	.....	2	.....	8	.....	E	.....	.....	.....	.....	Cloudy.....	
Powhatan, New York, N. Y.	29.64‡	750.3‡	.....	.....	62	16.7	88	E	39.0	17.4	.....	.....	10	.....	E	0.87	22.1	.....	.....	Rainy	
Quinnebaug, Norfolk, Va.	30.39‡	771.9‡	.....	.....	63	17.2	94	SW	.....	.....	4	.....	10	.....	SW	.....	.....	.....	.....	Raining.....	
Ranger. Hong-Kong, China	30.06	763.5	84	28.9	83	28.3	83	E	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas	30.15	765.8	60	15.6	58	14.4	100	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Santee, Annapolis, Md	28.75‡	730.2‡	.....	.....	62	16.7	94	S	.....	.....	8	.....	2	.....	.....	2.50	63.5	.....	.....	Heavy rain.	
Saratoga, Philadelphia, Pa	29.30	744.2	.....	.....	64	17.8	94	ESE	.....	.....	6	.....	6	.....	SE	Heavy	Heavy	.....	.....	Stormy.....	
St. Louis, League Island, Pa	29.17	740.9	70	21.1	65	18.3	94	ESE	75	33.5	.....	.....	10	.....	E	1.69	42.9	.....	.....	Cloudy.....	
Supply, Havre, France	29.77	756.1	57	13.9	55	12.8	80	WSW	.....	.....	5	.....	2	.....	WSW	.....	.....	.....	.....	Showery	
Swatara, Boston, Mass.	30.01‡	762.2‡	.....	.....	57	13.9	81	ESE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Trenton, Villafranca, France	29.75‡	755.6‡	.....	.....	77	25.0	74	SSW	.....	.....	2	.....	2	.....	S;W	0	0	.....	.....	Clear.....	
Vandalia, N. 42° 14′, E. 6° 16′	30.00‡	762.0‡	.....	.....	66	18.9	79	W	.....	.....	4	.....	5	.....	W	.....	.....	Mod'ate	W	Fair.....	
Wabash, Boston, Mass.	.....	.....	.....	.....	54	12.2	74	E	10	4.5	.....	.....	5	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 38° 38', E. 137° 34'		29.77*	756.1*	70	21.1	95	NW			4		5		NW	Light			Foggy	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 26° 06', W. 112° 44'		29.96*	761.0*	75	23.9	100	W			2		0			0	Small	W	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Victoria, B. C		30.37*	771.4*	44	6.7	84	ENE			1		1		E	0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 48° 55', W. 44° 10'		29.67†	753.6†	53	11.7		NE			2		2c		ENE	Slight	Moderate; high	W	Fair	Capt. W. H. Thompson.
S. S. Celtic, New York, N. Y.		29.71*	754.6*	54	12.2	??	SW			6		10		NW	10hours			D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 45° 7', W. 44° 45'		29.58	751.3	53.0	11.7	76	ENE			3		5		E	2 hours	3	NE	Fair	Capt. Uddütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		29.25*	747.9*	55	12.8	93	E			3		10		E	Heavy			Cloudy	Captain Sargent.
S. S. Ohio, Liverpool		29.36	745.7	52	11.1	86	SW			4		8		SW	Blank			Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 46° 21′ W. 47° 09′		29.73*	755.1*				NE	15	6.7			6		NE		Heavy	WSW	D. clouds	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Porto Cabello, Venezuela		29.84	757.9	82	27.8	78	Calm	0	0		2c		Calm		0			Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 24, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:38 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—1r.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.00	762.0	71.2	21.8	75	N	.....	.....	3	.....	0	.....	.....	0	0	Clear	Kesxuche.
Algiers	.....	.....	30.02	762.6	72.7	22.6	63	NW	.....	.....	3	.....	0	.....	.....	0	0	Clear	Tourillere.
La Calle	.....	.....	30.08	763.9	74.7	23.7	78	NNW	.....	.....	3	.....	4	.....	.....	0.224	5.7	Cloudy	Foufrede.
Tunis	.....	.....	30.08	764.1	77.0	25.0	61	NW	.....	.....	4	.....	3	.....	.....	0.307	7.8	Pretty fair.	Jacques.
Sfax	.....	.....	30.16	766.0	77.0	25.0	.....	NNE	.....	.....	6	.....	9	.....	.....	0	0	Covered	Gau.
Saida	.....	.....	30.04	763.0	73.8	23.2	30	E	.....	.....	1	.....	1	.....	.....	0	0	Very fair	Herbin.
Tebessa	.....	.....	30.05	763.3	66.7	19.3	63	N	.....	.....	1	.....	7	.....	.....	0	0	Very cloudy	Watrin.
Geriville	.....	.....	30.09	764.2	68.0	20.0	37	E	.....	.....	3	.....	0	.....	.....	0	0	Clear	Brugniaux.
Laghouat	.....	.....	30.11	764.9	68.4	20.2	51	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.11	764.9	81.5	27.5	37	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.50	749.3	30.04	763.1	59.7	15.4	65	SE	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.21	742.0	29.98	761.4	56.5	13.6	54	WSW	.....	.....	2	.....	9	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.10	739.2	29.98	761.4	56.1	13.4	69	S	.....	.....	1	.....	5cks	.....	N	0.469	11.89	.....	Julius Mikolik.
Gratz	28.80	731.6	30.06	763.4	54.3	12.4	72	WSW	.....	.....	2	.....	2	.....	.....	0.217	5.50	.....	Andreas Rospini.
Hermannstadt	28.54	724.8	30.02	762.4	56.3	13.5	67	NNW	.....	.....	1	.....	2	.....	.....	0.030	0.75	.....	Prof. A. Gottschling.
Kremsmünster	28.58	725.8	29.90	759.5	55.8	13.2	54	E	.....	.....	1	.....	1	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.94	735.0	29.92	760.0	54.3	12.4	85	NW	.....	.....	1	.....	6	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.37	758.8	29.98	761.6	65.5	18.6	68	E	.....	.....	2	.....	1k	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.00	751.7	30.06	763.4	58.3	14.6	60	NW	.....	.....	3	.....	5	.....	.....	0.122	3.1	.....	Julius Csics, S. J.
Szegedin	29.76	756.0	30.04	763.0	59.5	15.3	52	N	.....	.....	1	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.91	759.8	30.02	762.4	63.0	17.2	69	E	.....	.....	1	.....	9	.....	.....	0.142	3.6	Raining	P. Busin.
Vienna	29.27	743.5	29.98	761.5	60.3	15.7	87	S	.....	.....	2	.....	1	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.322	8.2	.....	Prof. M. Passau.
Brussels	29.24	742.8	29.44	747.8	51.6	10.9	93	S	.....	.....	7	.....	10	.....	SSW	0.360	9.30	Raining	Royal Observatory
Furnes	29.28	743.7	29.30	744.3	55.2	12.9	89	SSW	.....	.....	8	.....	10	.....	.....	0.350	8.9	.....	M. E. de Cae
Maeseyck	29.42	747.2	29.55	750.5	52.9	11.6	83	S	.....	.....	2	.....	10	.....	.....	0.417	10.6	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

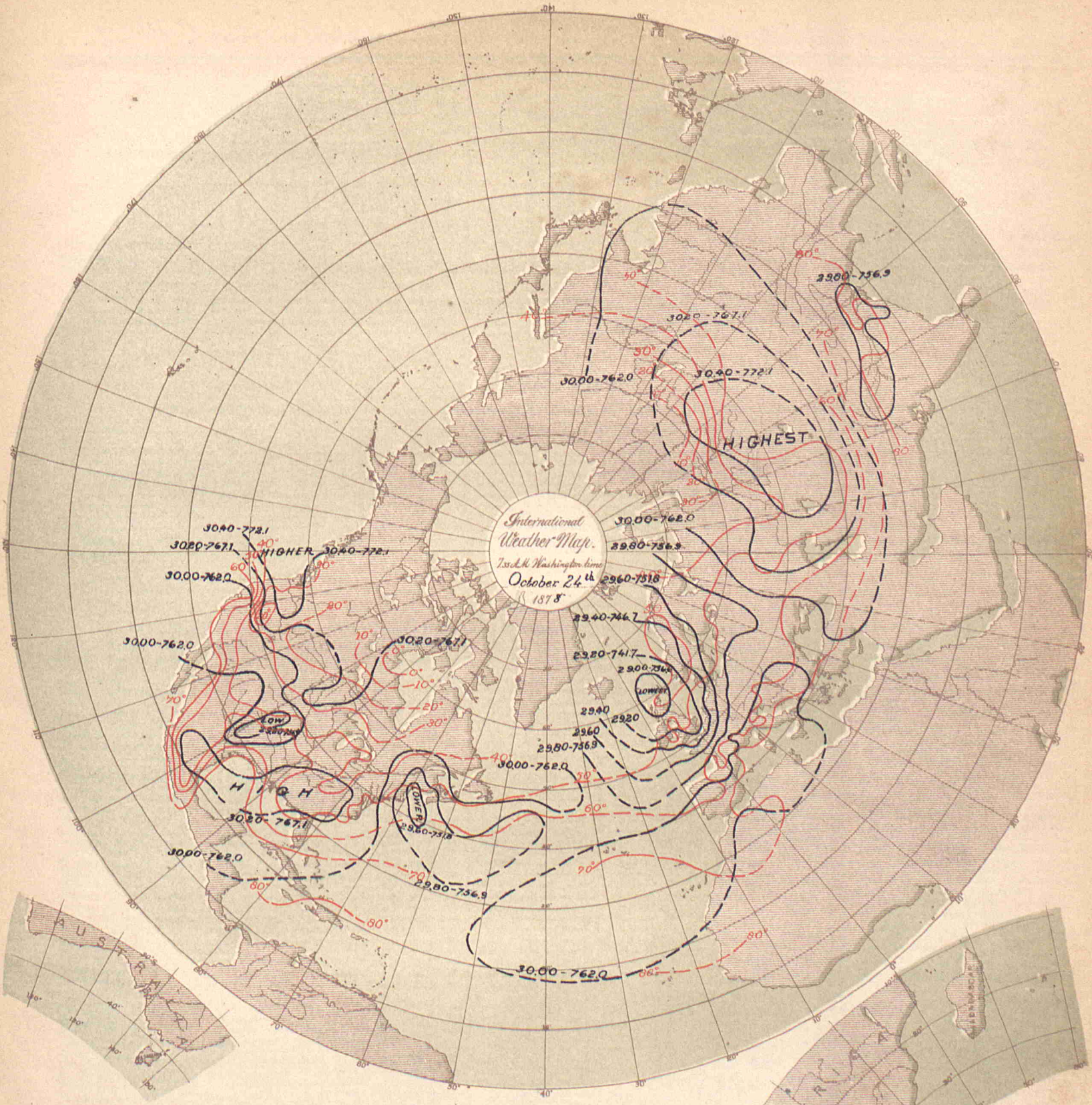
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society. Edinburgh. and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	28.91	734.3	29.00	736.6	49.0	9.4	.....	SW	12	5.4	.....	.....	3	.....	.....	0	0	Blue sky....	W. Boswell.
Ardrossan	29.03	737.3	29.05	737.9	48	8.9	.....	SW	.....	.....	4	.....	9	.....	.....	.....	.....	Raining.....	George Carrick.
Armagh, Observatory	.....	.....	29.16	740.7	47.7	8.7	.....	SW	12	5.4	.....	.....	10	.....	.....	.....	.....	Overcast	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.15	740.4	48.4	9.1	.....	WSW	16	7.2	.....	.....	8	.....	.....	.....	.....	Overcast....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	28.71	729.2	29.13	739.9	45.3	7.4	.....	W	.....	.....	4	.....	10	.....	.....	0.17	4.3	Overcast....	J. McLandsborough.
Bridgetown, (Barbados)	29.66	753.4	29.89	759.2	82.5	28.1	.....	NE	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.08	738.6	50.6	10.3	.....	Var.	.....	.....	3	.....	10	.....	.....	.....	.....	Heavy rain..	H. Todd. [H.C.
Cardington	.....	.....	29.14	740.1	48.0	8.9	.....	W	.....	.....	2	.....	8	.....	.....	.....	.....	Overcast....	John McLaren.
Chatham, School M. E.	29.00	736.6	29.13	739.9	56.2	13.4	.....	SW	.....	.....	4	.....	10	.....	.....	.....	.....	Drizzling....	Lt. G. W. Morris, R. E.
Dartmoor	27.87	707.9	29.32	744.7	46.0	7.8	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	Showery.....	Alexander Watt.
Donaghadee	29.10	739.1	29.13	739.9	47	8.3	.....	W	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.18	741.2	29.20	741.7	57	13.9	.....	SW	.....	.....	7	.....	10	.....	.....	.....	.....	Showery	J. Costello.
Falmouth, Observatory	29.18	741.2	29.41	747.0	52.3	11.3	.....	WNW	.....	.....	5	.....	9	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.24	691.9	29.56	750.8	94.0	34.4	.....	E	.....	.....	3	.....	1	.....	.....	.....	.....	D. clouds....	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.70	754.4	29.92	760.0	87	30.6	.....	Calm?	.....	.....	1?	.....	4	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	29.19	741.4	50	10.0	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Showery	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.02	762.5	30.08	764.0	.....	.....	.....	N	.....	.....	2	.....	1	.....	.....	.....	.....	Blue sky.....	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.85	732.8	29.06	738.1	44.1	6.7	.....	SW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	D. G. Maclean.
Great Yarmouth	29.01	736.8	29.01	736.8	56	13.3	.....	SSW	.....	.....	6	.....	8	.....	.....	.....	.....	Raining.....	G. T. Watson.
Greenwich, Royal Obs'y	28.96	735.6	29.13	739.9	57.8	14.3	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast....	The Staff, for G. B. Airy.
Guernsey	29.16	740.7	29.38	746.2	56	13.3	.....	WSW	.....	.....	6	.....	8	.....	.....	.....	.....	Squally.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.44	747.8	54	12.2	.....	NW	.....	.....	3	.....	k	.....	.....	0.45	11.4	Showery.....	M. P. Moyle.
Holyhead	29.16	740.7	29.21	741.9	51	10.6	.....	W	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds....	John Tilston.
Jersey	29.14	740.1	29.43	747.5	57.0	13.9	.....	W	.....	.....	7	.....	10	.....	.....	Blank	Blank	Threatening	J. Fisher.
Kew, Observatory	29.12	739.6	29.15	740.4	57.0	13.9	.....	WSW	27	12.1	.....	.....	10	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.20	741.7	29.23	742.4	50	10.0	.....	WNW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.14	740.1	44.1	6.7	.....	N	.....	.....	2	.....	10	.....	.....	.....	.....	Raining.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.95	760.7	30.03	762.7	75.4	24.1	.....	NNW	.....	.....	2	.....	8ks	.....	.....	.....	.....	Overcast....	Sergt. Beckett.
Naira	28.85	732.8	28.94	735.1	49	9.4	.....	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Raining.....	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.04	763.0	74.5	23.6	.....	N	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	C. S. Duncombe.
Nottingham, Observatory	28.96	735.6	29.16	740.7	42.8	6.0	.....	WNW	.....	.....	3	.....	10n	.....	WNW	0.704	17.88	Raining.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.65	727.7	29.17	740.9	43.0	6.1	.....	W	.....	.....	3	.....	10	.....	.....	Blank	Blank	Overcast....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.21	741.9	46	7.8	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	H.E. Bellamy.
Plymouth	29.28	743.7	29.35	745.5	53.3	11.8	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Overcast	John Merrifield.
Roche's Point	29.30	744.2	29.34	745.2	51	10.6	.....	W	.....	.....	4	.....	8	.....	.....	.....	.....	Showery.....	W. Kennedy.
Saint Ann's Head	29.14	740.1	29.30	744.2	49	9.4	.....	NW	.....	.....	3	.....	7	.....	.....	.....	.....	Showery.....	John C. Walker.
Sandwick Manse, (Orkneys	.....	.....	28.89	733.8	50	10.0	.....	W	23	10.3	.....	.....	8	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.93	760.2	70.2	21.2	.....	SW	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	28.88	733.5	29.16	740.7	43.3	6.3	.....	NE	.....	.....	1	.....	10	.....	.....	0.59	15.0	Raining.....	W. F. Cooper.
Silloth, Rectory	29.07	738.4	29.10	739.1	54.5	12 5	67	W	.....	.....	3	.....	4	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	28.74	730.0	29.14	740.1	45.0	7.2	.....	SW	.....	.....	1	.....	10	.....	.....	.....	.....	Raining.....	Rev. S. J. Perry.
Strathfield Turgiss	28.95	735.3	29.16	740.7	55.4	13.0	.....	W	.....	.....	1	.....	0	.....	.....	Blank	Blank	Blue sky.....	Rev. C. H. Griffith, F.M.S.
Thurso	28 86	733.0	28.92	734.6	51	10.6	.....	W	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	John Trotter.
Truro, Royal Institution	.....	.....	29.41	747.0	56	13.3	.....	W	.....	.....	7	.....	6	.....	.....	.....	.....	D. clouds....	W. Newcombe.
Valencia, Observatory	29.44	747.8	29.46	748.3	50.5	10.3	.....	W	23	10.3	.....	.....	5	.....	.....	Blank	Blank	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.62	752.3	48.0	8.9	82	SW	.....	.....	3	.....	0	.....	.....	0.15	3.8	.....	Francis Abbott, F.R.A.S.
Leith, Restairig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.82	757.4	30.00	762.1	79.0	26.1	63	ENE	18.0	8.0	.....	0	2	.....	ENE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	30.00	762.0	30.09	764.3	59.2	10.1	68	NW	9	4.0	.....	.....	3	.....	.....	0	0	Fine.....	R. L. J. Ellery.
Monach L't-house, (Hebrides	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 0', W. 42° 55'	7	Confused	Raining.....	Capt. Alex. Wilson.
Barque Commewyne, N. 24° 30', W. 50° 0'	1	W	Blue sky....	Capt. A. Buchan.
S. S. Gordon Castle, N. 41° 10', W. 56° 45'	6	NNE	D. clouds....	Capt. W. Waring.
Barque Margaret Smith, N. 23° 25', W. 31° 10'	3	SE	D. clouds....	Capt. D. W. A. Quatle.
Schooner Traveller	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.23	666.2	29.95	760.7	67.6	19.8	88	SE	.....	.....	.....	2ks	7s	.....	.....	0.1	2.5	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.55	750.5	29.60	751.7	49.6	9.8	76	SSW	.....	.....	4	.....	10	.....	.....	.....	.....	.....
Fanöe	29.37	746.1	29.39	746.6	52.0	11.1	90	SSW	.....	.....	6	.....	7	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Farõe)	29.90	734.0	29.93	734.9	46.4	8.0	75	NE	.....	.....	4	.....	7	.....	.....	.....	.....	.....
Vestervig	29.07	738.4	29.24	742.7	49.3	9.6	92	S	.....	.....	6	.....	10	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.04	737.6	29.59	751.6	56.5	13.6	98	SW	.....	.....	1	.....	10	.....	.....	0.069	1.6	Covered	Collignon, Director.
Amiens, Normal School	29.39	746.6	29.50	749.4	55.4	13.0	77	S	.....	.....	3	.....	0	.....	.....	0.213	5.4	Clear	Bonvallet, Director.
Avignon, Normal School	29.97	761.1	30.04	763.1	64.4	18	55	ENE	.....	.....	1	.....	0	.....	.....	0	0	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.20	741.6	29.74	755.5	57.7	14.3	69	SSW	.....	.....	4	.....	10	.....	SW	0	0	Covered	C. Saillard.
Beauvais, Normal School	29.22	742.3	29.50	749.4	56.7	13.7	85	S	.....	.....	4	.....	10	.....	SW	0	0	Covered	Frere Eugene Marie, Director.
Besançon, Normal School	28.99	736.3	29.87	758.8	58.6	14.8	50	S	.....	.....	6	.....	8	.....	SW	0	0	Very cloudy	M. Carre, Director.
Bourg-en-Bresse, N. School	29.00	736.6	29.92	759.9	58.6	14.8	68	S	.....	.....	6	.....	5cn	.....	S	0.256	6.5	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.26	743.3	29.82	757.3	56.5	13.6	75	SW	.....	.....	4	.....	5n	.....	SW	0.039	1.00	Cloudy	A. Waquet, Director.
Brest, Naval Observatory	29.30	744.2	29.54	750.4	56.5	13.6	88	W	.....	.....	4	.....	10	.....	W	0.295	7.50	Squally	M.de Rermaur, Director.
Carcassonne, Normal School	29.62	752.3	30.03	762.7	65.8	18.8	66	NW	.....	.....	1	.....	0	.....	.....	0.020	0.5	Clear	Septembre, Director.
Caen	29.34	745.3	29.42	747.2	58.3	14.6	89	SW	.....	.....	2	.....	8	.....	S	0.370	9.4	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.99	736.4	29.54	750.4	56.5	13.6	93	SW	.....	.....	6	.....	10	.....	.....	0.138	3.5	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.37	746.0	29.69	754.0	52.9	11.6	97	S	.....	.....	6	.....	10n	.....	S	0.008	0.2	Covered	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.56	725.4	29.88	759.0	64.9	18.3	52	S	.....	.....	1	.....	5	.....	WSW	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	28.95	735.4	29.83	757.6	53.4	11.9	80	SSW	.....	.....	3	.....	10	.....	SSW	.....	.....	Light rain	Dr. Coulet, Director.
Commune de Grésque*	28.94	735.1	30.08	764.1	61.3	16.3	41	NW	.....	.....	2	.....	2	W	.....	0	0	¼ covered	M. Kina.
Grenoble, Normal School	29.19	741.3	29.95	760.7	61.4	16.8	62	NW	.....	.....	1	2c	.....	W	.....	0.030	0.75	Slightly cl'dy	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.52	749.7	29.73	755.1	60.1	15.6	96	S	.....	.....	4	.....	10	.....	.....	0.118	3.0	Raining	Mouillot, Director.
Le Mans, Normal School	29.30	744.2	29.60	751.8	58.6	14.8	93	SW	.....	.....	4	.....	10	.....	SW	0.04	1.	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.99	736.4	29.90	759.4	59.7	15.4	55	S	.....	.....	4	.....	2	.....	SW	0.12	3.	Slightly cl'dy	Baudry, Director.
Lorient, Naval Observatory	29.50	749.3	29.60	751.8	57.6	14.2	95	WSW	.....	.....	10	.....	.....	.....	SW	1.114	28.3	.....	Lt T. Carré, Director.
Mâcon, Normal School	29.83	757.6	29.86	758.5	59.0	15	89	E	.....	.....	1	.....	0	.....	.....	0	0	Clear	M. Galzin, Director.
Mirecourt, Normal School	28.84	732.6	29.87	758.8	56.3	13.5	73	WSW	.....	.....	3	.....	10n	.....	ENE	0.04	1.	Covered	M. Barbier, Director.
Nismes, Normal School	29.87	758.6	30.07	763.7	71.2	21.8	51	SW	.....	.....	1	.....	2	.....	NW	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.91	734.2	29.95	760.8	64.4	18	53	S	.....	.....	1	.....	8	S	S	0.24	6.	Very cloudy	M. Cantier.
Puy de Dome (Summit)	25.08	636.9	.....	.....	40.5	4.7	100	W	.....	.....	6	.....	Fog	.....	.....	0.071	1.8	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.83	757.7	29.86	758.5	59.5	15.3	97	W	.....	.....	6	.....	10	W	W	0.24	6.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.35	745.6	29.44	747.8	59.0	15.0	86	W	.....	.....	4	.....	10	.....	S	0.098	2.5	Covered	Frere Lucard, Director.
Saint Malo (Port)	.....	.....	29.49	749.0	57.2	14.0	95	WSW	.....	.....	3	.....	10	.....	WSW	0.224	5.70	Raining	M. H. Hercouet.
Saint Maur, (near Paris)	29.43	747.4	29.59	751.6	55.4	13.0	93	SSW	.....	.....	4	.....	10	W	SSW	0.618	15.7	.....	E. Renou.
Tarbes, Normal School	28.85	732.9	29.93	760.1	59.0	15	79	W	.....	.....	2	.....	5	NW	W	0	0	Cloudy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.34	745.1	30.04	763.1	59.5	15.3	88	S	.....	.....	1	.....	2	.....	NW	0	0	Slightly cl'dy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	758.0	29.87	758.7	84.2	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	L'Abbé Marchès.
Lyons, Observatory	.....	.....	29.95	760.6	61.5	16.4	60	.....	.....	.....	.....	.....	6	.....	.....	0.008	0.2	.....	.....
Marseilles, Observatory	.....	.....	30.03	762.8	66.6	18.9	40	WNW	.....	.....	1-2	.....	1	.....	.....	0	0	.....	The Staff.
Mont-Louis	24.87	631.8	30.19	766.8	52.2	11.2	53	SW	.....	.....	5	.....	2	.....	SW	0	0	.....	M. Cave.
Nice	.....	.....	30.02	762.4	65.8	18.8	76	W	.....	.....	2	.....	2	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.30	744.3	29.58	751.3	55.2	12.9	95	SSW	.....	.....	6	.....	10	.....	SSW	0.098	2.5	Sprinkling	Marié Davy, Director
Perpignan	.....	.....	30.02	762.4	66.7	19.3	66	S	8.7	1.67	.....	.....	1	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.54	572.5	.....	.....	43.7	6.5	.....	W	.....	.....	3	.....	6	.....	.....	0	0	Fair	Gen'l de Nansouty
Toulouse, Observatory	29.31	744.4	30.03	762.8	64.2	17.9	68	SE	.....	.....	1	.....	3	.....	.....	0	0	.....	B. Baillaud.
Tours	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.031	0.8	.....	C. Marqueyssac.
Versailles	.....	.....	29.55	750.6	57.2	14.0	78	SW	.....	.....	6	.....	10	.....	.....	0.091	2.29	Raining	Dr. A. Bernay.
Zi-Ka-Wei, (near Shanghai)	30.11	764.7	30.13	765.3	52.7	11.5	90	N	3.6	1.6	.....	.....	0	.....	.....	0.035	0.9	Clear	Marc Dechevrens, S. J.
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.98	736.1	29.82	757.4	54.1	12.3	74	W			3		7	W		0.020	0.5	Raining	Prof. Dr. Hoh.
Berlin	29.61	752.1	29.78	756.4	54.5	12.5	66	S			4		7			0.012	0.3		Prof. Arndt.
Breslau	29.41	746.9	29.93	760.3	54.7	12.6	59	SW			2		2			0	0		Royal University Obs'y
Carlsruhe	29.38	746.2	29.80	756.9	57.9	14.4	59	SW			4		10			0.374	9.5		Albert Senz.
Cassel	29.12	739.7	29.72	755.0	53.2	11.8	71	W			4		10 •	SW		0	0		Dr. H. Möhl.
Crefeld	29.34	745.3	29.50	749.4	54.1	12.3	80	S			6		10			0.12	3.	Raining	Director Lose.
Emden	29.48	748.9	29.52	749.8	50.7	10.4	87	SE			5		10			0.008	0.2		Prof. Prestel.
Frankfort on the Main	29.41	747.0	29.77	756.1	56.7	13.7		SSW			3		9			Inap.	Inap.		Physical Society.
Friedrichshafen	28.48	723.3	29.92	759.9	56.8	13.8	60	NW			4		2	WSW		0.059	1.5		M. Wilhelm.
Hamburg	29.53	750.0	29.60	751.8	53.1	11.7	79	SSW			5		10n			0	0		Captain F. Hegemann.
Kiel	29.54	750.2	29.56	750.7	52.3	11.3	81	SSW			3		10			0.016	0.41		Prof. G. Karsten.
Königsberg, (Prussia)	29.74	755.3	29.82	757.4	53.2	11.8	70	W			5		2			0.008	0.2		Prof. E Luther.
Köslin			29.74	755.5	51.1	10.6		SW			6		2			0	0		H. Müller.
Leipsic, Observatory	29.41	747.0	29.83	757.6	55.0	12.8	57	SSW			5		7	SW		0.031	0.8		Prof. Bruhns.
Memel, Naval School	29.75	755.6	29.80	756.8	51.8	11.0	70	WSW			4		7cs						Reinbrecht and Skalweit.
Neufahrwasser	29.82	757.3	29.83	757.7	51.8	11.0	68	SW			3		7			0	0		A. Lothes.
Posen	29.61	752.2	29.91	759.6	53.4	11.9	66	SW			5		3			0	0		Dr. Magener.
Strassburg (in Alsace)	29.31	744.4	29.85	758.2	57.2	14.0	70	S			3		10	W		0.056	1.42	Raining	Astronomical Observatory.
Stuttgart	28.89	733.8	29.82	757.5	56.3	13.5	59	W			1		8	W		0	0		Prof. Schoder.
Treves, (Trier)	29.16	740.6	29.67	753.7	56.3	13.5	70	W			8		10			0.977	24.82		Prof. Flesch.
Weissenburg, (Bavaria)	28.40	721.4	29.88	758.9	53.4	11.9	64	SW	4.5	2.0			8ck		W	0	0		Dr. Von Bebber.
Wustrow, Naval School	29.64	752.8	29.66	753.4	51.4	10.8	73	S			5		8s			0	0		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.58	751.3	29.96	760.9	80.2	26.8		SW			1.0							⅛ clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee													2	SE		0	0	D. clouds	
Deesa	29.38	746.3	29.85	758.3	87.1	30.6	42	Calm					2	SE		0	0	D. clouds	
Bombay	29.80	756.8	29.84	757.8	84.4	29.1	81	WSW	4	1.8			9	SSE	SE	0.01	0.3	D. clouds	
Poona	27.82	706.6	29.81	757.2	81.0	27.2	72	S					7		S	0	0	D. clouds	
Lahore	29.04	737.6	29.79	756.6	75.9	24.4	46	Calm	0.5	0.2						0	0	Blue sky	
Belgaum	27.31	693.6	29.85	758.1	74.8	23.8	88	W	5	2.2			3			0	0	D. clouds	
Koorkee	28.85	732.8	29.75	755.6	78.8	26.0	30	Calm	3	1.3						0	0		
Agra	29.22	742.3	29.78	756.5	84.2	29.0	28	NW								0	0		
Nagpur	28.79	731.2	29.83	757.8	79.8	26.6	61	N	2.2	1.0			0			0	0	Blue sky	
Lucknow	29.40	746.8	29.77	756.2	84.8	29.3	29	Calm	1.1	0.5						0	0	Blue sky	
Allahabad	29.47	748.5	29.78	756.4	78.1	25.6	46	Calm	1.3	0.6			0			0	0	Blue sky	
Patna	29.60	751.9	29.78	756.5	79.5	26.4	54	W	1.3	0.6			0			0	0	Blue sky	
Hazaribagh	27.80	706.0	29.82	757.5	73.3	22.9	49	W	5.6	2.5			0			0	0	Blue sky	
Cuttack	29.71	754.6	29.79	756.6	84.0	28.9	72	ENE	1.8	0.8			2			0.02	0.5	D. clouds	
Calcutta (Alipore)	29.78	756.3	29.80	756.8	78.5	25.8	80	Calm	0	0			0			0	0	Blue sky	
Goalpara	29.41	747.0	29.80	756.9	79.9	26.6	57	ENE	1.7	0.8			0			0	0	Blue sky	
Chittagong	29.71	754.7	29.80	757.0	79.9	26.6	68	N	4.3	1.9			2			0	0	Misty	
Sibsagar	29.55	750.7	29.90	759.3	72.8	22.7	83	ENE	3.6	1.6			9	W	W	0	0	D. clouds	
Jubbulpore	28.46	722.8	29.82	757.4	81.0	27.2	47	Calm	1.6	0.7			2			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.63	752.5	30.03	762.8	58.5	14.7	60	NE	3.9	1.7	.....	.....	5	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.91	759.7	30.02	762.5	61.7	16.5	65	NE	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.83	757.7	30.02	762.5	62.2	16.8	54	E	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Conte Alm. Da Schio.
Bergamo	28.70	729.0	30.02	762.6	59.4	15.2	76	SE	.....	.....	1	.....	9	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.50	749.2	30.01	762.3	59.9	15.5	84	E	.....	.....	2	.....	7	ESE	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	29.11	739.4	30.02	762.4	57.2	14.0	84	NNW	0.7	0.3	.....	.....	2	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	28.10	713.7	30.00	762.0	57.4	14.1	73	NW	.....	.....	2	.....	2	SW	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.79	756.7	30.01	762.3	65.7	18.7	79	E	.....	.....	4	.....	6	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.83	757.6	30.00	761.9	68.5	20.3	55	SE	6.3	2.8	.....	.....	0	.....	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.75	755.6	30.07	763.7	59.2	15.1	82	ENE	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.77	756.2	30.03	762.7	68.0	20.0	59	SW	.....	.....	2	.....	5	SW	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.90	759.5	29.99	761.7	66.6	19.2	70	W	9.4	4.2	.....	.....	4	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.97	761.1	30.01	762.3	59.5	15.3	88	NW	15.0	6.7	.....	.....	7	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.49	723.7	30.02	762.6	59.0	15.0	85	NNE	.....	.....	1	.....	6	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.83	757.6	30.00	762.0	70.5	21.4	50	S	11.2	5.0	.....	.....	6	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.83	757.7	30.03	762.7	73.8	23.2	58	SW	.....	.....	1	.....	6	SW	.....	0.031	0.8	.....	Prof. L. Palmieri.
Lecce	29.74	755.5	29.99	761.8	72.1	22.3	45	NE	1.8	0.8	.....	.....	5	.....	.....	0	0	.....	Prof. C. De Giorgi
Cagliari	29.82	757.3	30.00	762.1	73.4	23.0	50	NW	.....	.....	2	.....	3	NW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.16	740.6	30.02	762.5	74.1	23.4	70	SW	0	0	.....	.....	8	.....	.....	0.291	7.4	.....	Prof. F. D. Conti.
Palermo	29.82	757.3	30.07	763.6	72.1	22.3	60	W	6.9	3.1	.....	.....	8	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.00	761.9	30.07	763.7	72.5	22.5	68	NE	3.8	1.7	.....	.....	10	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.79	756.6	29.99	761.7	63.8	17.7	74	NE	6.0	2.7	.....	.....	9s	.....	.....	0	0	Cloudy	.....
Tokei (Yeddo) Observatory	29.95	760.7	30.02	762.5	59.9	15.5	74	NNW	5.4	2.4	.....	.....	5s;ks	.....	.....	0.050	1.27	Cloudy	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	58.2	14.5	69	N	.....	.....	4	5c	0	.....	.....	0	0	½ cloudy	P. Ceballos.
Guadalajara	25.11	637.7	30.27	768.8	45.5	7.5	58	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Prof. L. Perez.
Leon	24.47	621.6	30.09	764.3	52.3	11.3	72	NW	.....	.....	2	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.14	587.6	30.28	769.2	46.4	8.0	82	Calm	0	0	.....	3c	0	.....	.....	0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	45.1	7.3	72	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	30.06	763.4	30.07	763.7	66.7	19.3	88	W	.....	.....	2	1	2	SW	NE	0.004	1.0	Clear	M, M. Cházaro.
San Luis Potosí	24.27	616.0	30.27	768.9	40.0	4.4	60	ENE	.....	.....	1	0	1	.....	ENE	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.11	764.9	30.14	765.6	69.8	21.0	73	NW	.....	.....	.....	2c	3sk	.....	.....	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	22.58	573.7	30.19	766.9	52.7	11.5	54	SSE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.36	592.7	30.10	764 5	41.4	5.2	85	NNE	0.9	0.4	.....	0	0	.....	.....	0	0	Clear	Prof. P. Spina.
Durango	28.38	720.8	30.03	762.9	75.77	23.32	80	NE	.....	.....	1	0	2	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	29.97	761.2	30.12	765.0	65.3	18.5	.....	Calm	.....	.....	0	7ck	2k	.....	.....	0	0	Misty	R. Banda, C. E.
San Juan E. Michapam	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.32	744.7	29.32	744.7	53.2	11.8	.....	S	.....	.....	6	.....	.....	.....	.....	0.012	0.3	.....	
Groningen	29.39	746.5	29.45	747.9	50.7	10.4	.....	S	.....	.....	4	.....	.....	.....	.....	0.047	1.2	.....	
Helder	29.28	743.8	29.28	743.8	59.5	10.3	.....	SE	.....	.....	5	.....	.....	.....	.....	0.441	11.2	.....	
Hellevoetsluis	29.34	745.1	29.34	745.1	51.6	10.9	95	S	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.33	744.9	29.37	746.1	51.1	10.6	93	S	.....	.....	5	.....	10	.....	.....	0.205	5.2	Dull	H. v d Bria
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.08	738.5	29.13	739.9	48.6	9.2	71	S	22.8	10.2	.....	.....	8	.....	.....	0.047	1.2	Light rain..	
Bróno	29.26	743.3	29.30	744.3	53.2	11.8	59	SE	9	4	.....	.....	2	.....	.....	0	0	.....	
Christiania	29.27	743.4	29.41	747.1	50.5	10.3	86	SSE	11	5	.....	.....	5	.....	.....	0.331	8.4	.....	
Tromsö	29.39	746.4	29.43	747.5	50.4	10.2	62	SW	13	6	.....	.....	9	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.84	757.9	30.03	762.7	67.3	19.6	89	ESE	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.13	740.0	30.16	766.0	63.5	17.5	70	SW	3.1	1.4	.....	.....	8	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.05	763.3	30.14	765.5	71.2	21.8	51	E	4.9	2.2	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.80	757.0	30.16	766.1	61.5	16.4	77	SSE	2.5	1.1	.....	.....	10	.....	.....	Inap.	Inap.	.....	The Staff.
Ponta Delgada, (Azores)	30.05	763.3	30.12	765.1	70.5	21.4	78	S	11.9	5.3	.....	.....	4	.....	.....	0.016	0.4	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.																Sea or swell: Height scale 0-9	Sea or swell: Direction from—		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 53', W. 23° 34'..	.....	.....	29.96	760.9	81.5	27.5	.....	NE	.....	.....	3	.....	1	.....	NE	1	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.50	749.4	29.93	760.1	52.7	11.5	66	SW	9	4	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.43	747.4	29.84	758.0	52.7	11.5	72	WSW	2	1	.....	.....	8	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.43	747.4	29.67	753.6	49.6	9.7	99	WNW	7	3	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.62	752.3	29.63	752.7	56.3	13.5	87	SSE	13	6	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.19	741.5	29.82	757.5	53.8	12.1	86	NW	11	5	.....	.....	10n;ks;	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.83	757.7	29.90	759.5	61.9	16.6	92	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	Raining	Kurdakof.
Kertch	29.89	759.3	29.91	759.8	62.2	16.8	93	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.44	747.7	29.98	761.6	53.6	12.0	74	SSE	13	6	.....	.....	8ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.74	755.5	29.95	760.6	61.2	16.2	61	ESE	18	8	.....	.....	9	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.84	757.9	29.86	758.4	42.3	5.7	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.68	728.4	30.08	764.0	64.2	17.9	64	Calm	0	0	.....	.....	8k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.28	769.2	30.20	767.1	56.7	13.7	62	E	18	8	.....	.....	5s	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.75	755.6	30.23	767.7	48.4	8.0	57	S	11	5	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.95	760.6	30.22	767.6	50.4	10.2	68	E	18	8	.....	.....	5	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.17	740.9	30.16	766.1	37.2	2.9	59	SSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.16	766.1	30.40	772.2	44.2	6.8	80	W	27	12	.....	.....	1ks	.....	.....	.....	.....	.....	
Tashkend	28.71	729.2	30.47	773.9	45.7	7.6	56	ENE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	30.00	762.1	30.59	776.9	56.5	13.6	92	N	4	2	.....	.....	3	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	30.08	764.0	30.40	772.1	9.5	—12.5	79	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.93	760.1	30.07	763.7	52.7	11.5	93	NW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.72	754.9	29.81	757.1	37.2	2.9	86	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 45° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.8	30.02	762.4	68.0	20	70	SSE	1.7	0.78	.....	.....	8	.....	.....	0	0	Almost cov'd	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.92	759.6	29.97	761.3	70.2	21.2	61	W	1.2	0.56	.....	5	3	NW	.....	0	0	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.11	688.6	.....	.....	59.4	15.2	83	SW	8.8	3.92	.....	.....	8	.....	.....	0.079	2.0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.91	709.0	30.15	765.9	56.3	13.5	89	SW	1.5	0.67	.....	0	10	.....	.....	0.012	0.3	Foggy	The Staff.
Murcia, Met. Obs'y	29.96	761.0	30.11	764.7	75.6	24.2	50	NE	2.4	1.08	.....	.....	.....	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.08	738.7	29.98	761.4	57.2	14.0	96	SW	18.6	8.33	.....	.....	10	.....	.....	0.008	0.2	Misty	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.99	761.8	30.06	763.5	71.6	21.9	74	NE	6.5	2.9	.....	0	2k	.....	NE	0	0	Fair	Benito Vines, S. J
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	763.1	30.14	765.6	67.8	19.9	76	NNE	3.7	1.7	.....	0	2	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.85	758.2	29.94	760.5	81.3	27.4	89	E	0	0	.....	8k	1kn	E	E	0.404	0.25	Cloudy	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.62	752.4	29.66	753.4	46.4	8.0	.....	E	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.45	748.1	29.50	749.4	47.1	8.4	97	SW	.....	.....	2	.....	10	.....	.....	0.114	2.9	.....	
Hernosand	29.47	748.5	29.52	749.8	50.4	10.2	62	SW	.....	.....	2	.....	1	.....	.....	0.034	16.1	Raining.....	
Stockholm	29.45	747.9	29.62	752.4	47.3	8.5	83	WSW	.....	.....	2	.....	5	.....	.....	0.386	8.5	.....	
Wisby	29.58	751.2	29.63	752.7	49.3	9.6	82	W	.....	.....	6	.....	3	.....	.....	0.336	8.5	.....	
Sub-Series.																			
Upsala	29.52	749.9	29.60	751.8	48.2	9.0	86	WSW	.....	.....	5	.....	5	.....	SW	0.036	0.92	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.53	724.6	29.04	760.4	59.5	15.3	44	SSW	.....	.....	3	.....	3	.....	.....	0	0	Vapory.....	The Observatory.
Zurich	28.28	718.3	29.91	759.6	57.2	14.0	58	W	.....	.....	1	.....	2	.....	.....	0.008	0.2	Clear.....	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.5 mm.; Thermometer, +4.2 cent.; Relative Humidity, —30 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.98	761.5	69.4	20.8	72	ENE	2	1.0	.....	.....	6	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.10	764.6	72.5	22.5	.....	W	.....	.....	1	.....	2	.....	.....	0.31	8.	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.87	758.7	29.97	761.3	77.9	25.5	65	SW	.....	.....	1	.....	2c;s	.....	.....	0	0	D. clouds.....	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.88	758.9	29.95	760.7	49.8	9.9	94	E	13	5.8	.....	.....	10n	.....	.....	0	0	Overcast.....	Hon. J. Ferguson.
Brockville, Ontario	29.68	753.9	29.99	761.7	41	5.0	.....	Calm	0	0	.....	0	2s	.....	W	0.77	19.6	Clear.....	W. R. Bigg.
*Chatham, N B	29.90	759.4	29.96	761.0	50	10.0	86	E	13	5.8	.....	2k	8ks	E	E	0	0	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island.	29.95	760.7	29.99	761.7	50	10.0	92	SE	13	5.8	.....	.....	10n	.....	Calm	0	0	Threatening	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.90	759.4	40.7	4.8	82	NW	.....	.....	2	.....	10s	.....	.....	0.325	8.26	Cloudy.....e.	James Smith, M. A.
Dalhousie, N. B	29.80	756.9	29.96	761.0	46.9	8.3	99	E	.....	.....	8	.....	.....	.....	.....	0.09	2.3	Drizzling.....	H. A. Johnson.
Esquimault, B. C	30.34	770.6	30.39	771.9	35.1	1.7	100	Calm	.....	.....	.....	1cs	.....	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	29.88	758.9	29.90	759.4	48	8.9	81	Calm	0	0	.....	.....	10n	.....	S	0.01	0.3	Light rain...	J. McWilliams.
Fredericton, N. B	29.77	756.1	29.84	757.9	48.1	8.9	84	E	18	8.0	.....	.....	10s	.....	E	Inap	Inap.	Gloomy	Prof. Harrison.
*Fort Garry Manitoba	29.44	747.8	30.32	770.1	22	— 5.6	95	N	5	2.2	.....	2k	5ks	N	N	0	0	Clearing.....	James Stewart.
Granton, Ontario	28.98	736.1	30.13	765.3	34	1.1	.....	Calm	.....	.....	0	0	0	.....	.....	0.25	6.3	Clear.....	James Grant.
*Halifax, N. S	29.74	755.4	29.88	758.9	51	10.6	95	SE	14	6.3	.....	.....	10n	.....	SE	0.088	0.84	Light rain...	F. Allison, M. A.
Hamilton, Ontario	29.78	756.4	30.16	766.1	37.7	3.2	86	W	.....	.....	1	0	0	.....	.....	0.13	3.3	Clear.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.10	764.5	30.12	765.0	46	7.8	84	NE	.....	.....	3	.....	10	.....	.....	0.38	9.7	Overcast.....	E. Weedon.
*Kingston, Ontario	29.68	753.9	30.02	762.5	37	2.8	87	W	4	1.8	.....	0	0	.....	.....	1.34	34.0	Clear.....	S. Woods, M. A.
Little Glace Bay, N. S	30.00	762.0	30.04	763.0	48.9	9.4	91	SE	20	8.9	.....	.....	10n	.....	.....	0	0	Misty.....	C. H. Rigby.
*Montreal, Quebec	29.66	753.4	29.86	758.4	46	7.8	81	E	16	7.2	.....	8k	2ks	NW	.....	0.28	7.1	Cloudy.....	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.29	744.0	30.01	762.2	34	1.1	90	E	4	1.8	.....	0	0	.....	.....	0.42	10.7	Clear.....	Rev. R. Mosley.
Peterboro, Ontario	29.30	744.2	30.07	763.8	37.7	3.2	81	NW	.....	.....	1	0	0	.....	.....	1.65	41.9	Fine.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.41	747.0	30.12	765.0	36	2.2	100	Calm	0	0	.....	8k	0	W	.....	0.25	6.3	Fair.....	H. Morgan.
Port Hastings, N. S	29.87	758.7	29.92	760.0	51.3	10.7	.....	E	9	4.0	.....	.....	.....	.....	.....	0.18	4.6	Fine.....	Peter Grant.
Port Stanley, Ontario	29.44	747.8	30.12	765.0	32	0.0	95	W	1	0.4	.....	0	Haze	.....	.....	0.09	2.3	Clear.....	M. Payne.
*Quebec, Quebec	29.47	748.5	29.79	756.7	46	7.8	100	NE	.....	.....	5	.....	10n	.....	NE	0.85	21.6	Heavy rain..	Capt. Ashe, R. N
*Rockliffe, Ontario	29.56	750.8	30.03	762.7	36	2.2	90	NW	8	3.6	.....	0	5s	.....	NW	1.39	35.3	Fair.....	W. H. McIntyre.
St. Andrews, N. B	29.75	755.6	29.80	756.9	51	10.6	85	SE	20	8.9	.....	.....	5n	.....	.....	0	0	Cloudy.....	Dr. Gove.
St. John, N. B	29.63	752.6	29.79	756.7	51	10.6	86	E	15	6.7	.....	.....	10ks	.....	.....	0	0	Overcast.....	G. Murdock, C. E.
*Saugeen, Ontario	29.33	745.0	30.04	763.0	46	7.8	84	W	9	4.0	.....	5k	0	.....	.....	0.05	1.3	Fair.....	K. Stewart.
Stayner, Ontario	29.28	743.7	30.08	764.0	39	3.9	86	Calm	0	0	.....	2k	0	W	.....	0.36	9.1	Fair.....	R. J. Cole.
Stratford, Ontario	28.79	731.3	30.11	764.8	35.3	1.8	98	W	3.5	1.6	.....	4ck	3s	W	.....	0.127	3.23	Fair.....	C. J. MacGregor, M.
*Sydney, C. B	30.04	763.0	30.08	764.0	48	8.9	96	E	11	4.9	.....	.....	10n	.....	.....	0	0	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.71	754.6	30.10	764.5	36	2.2	89	W	1	0.4	.....	0	0	.....	.....	0.380	9.65	Clear.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,132 ft., or 350.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.68	753.9	29.91	759.7	48	8.9	70	NW	14	6.3	.....	5k	0	NW	.....	0.28	7.1	Fair	
Alpena, Michigan	29.41	747.0	30.08	764.0	34	1.1	90	W	2	0.9	.....	0	0	....	.....	0	0	Clear	
Atlanta, Georgia	29.06	738.1	30.24	768.1	47	8.3	62	NW	10	4.5	.....	0	Sm'e	.....	Calm	0	0	Clear	
Atlantic City, New Jersey	29.98	761.5	29.99	761.7	47	8.3	69	W	6	2.7	.....	0	0	.....	.....	0.08	2.0	Clear	
Augusta, Georgia	30.07	763.8	30.26	768.6	47	8.3	85	NW	4	1.8	.....	0	Haze	.....	.....	0	0	Clear	
Baltimore, Maryland	30.03	762.7	30.08	764.0	51	10.6	59	NW	8	3.6	.....	Haze	0	Calm	.....	0.01	0.3	Hazy	
Barnegat, New Jersey	29.95	760.7	29.98	761.5	49	9.4	67	NW	19	8.5	.....	0	0	.....	.....	0.09	2.3	Clear	
Bismarck, Dakota	28.19	716.0	30.05	763.3	25	— 3.9	62	E	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boerne, Texas	28.57	725.7	.....	.....	63	17.2	72	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.44	697.0	30.40	772.1	28	— 2.2	77	SE	4	1.8	.....	5k	0	Calm	.....	0	0	Fair	
Boston, Massachusetts	29.52	749.8	29.66	753.4	54.5	12.5	61	NW	23	10.3	.....	.....	8s	.....	NW	2.04	51.8	Clearing	
Brackettville, Texas	28.75	730.2	29.77	756.1	57	13.9	75	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Breckenridge, Minnesota	29.18	741.2	30.25	768.3	22	— 5.6	86	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Brownsville, Texas	29.99	761.7	30.06	763.5	65	18.3	80	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Buffalo, New York	29.38	746.2	30.09	764.3	43	6.1	92	W	3	1.3	.....	0	0	.....	.....	1.56	39.6	Clear	
Burkes, Arizona	.....	.....	.....	.....	58	14.4	Inap.	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.66	753.4	29.92	760.0	46	7.8	69	NW	8	3.6	.....	0	8s	.....	W	0.18	4.6	Clearing	
Cairo, Illinois	29.67	753.6	30.06	763.5	52	11.1	73	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	24.56	623.8	29.56	750.8	33	0.6	61	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.09	637.3	29.89	759.2	50	10.0	32	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.78	680.2	30.27	768.8	41	5.0	19	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.41	696.2	29.98	761.5	36	2.2	71	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.10	764.5	30.11	764.8	56	13.3	69	N	18	8.0	.....	0	0	.....	.....	0.33	8.4	Clear	
Cape Henry, Virginia	30.08	764.0	30.10	764.5	55	12.8	50	NW	36	16.1	.....	0	0	.....	.....	0.28	7.1	Clear	
Cape Lookout, N. Carolina	30.15	765.8	30.16	766.1	52	11.1	66	N	18	8.0	.....	0	0	.....	.....	0.18	4.6	Clear	
Cape May, New Jersey	30.00	762.0	30.03	762.7	52	11.1	65	NW	32	14.3	.....	0	0	.....	.....	0.03	0.8	Clear	
Castroville, Texas	29.24	742.7	29.96	761.0	50	10.0	93	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Charleston, South Carolina	30.18	766.6	30.24	768.1	52	11.1	60	N	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	26	— 3.3	88	W	4	1.8	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Chicago, Illinois	29.41	747.0	30.11	764.8	43	6.1	59	N	3	1.3	.....	.....	8s;fg	.....	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.50	749.3	30.10	766.1	44	6.7	84	SE	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Cleveland, Ohio	29.40	746.7	30.15	765.8	38	3.3	81	S	4	1.8	.....	0	Fog	.....	Calm	0.30	7.6	Clear	
Coleman City, Texas	28.15	715.0	29.82	757.4	48	8.9	78	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Columbus, Ohio	29.30	744.2	30.16	766.1	40	4.4	82	S	3	1.3	.....	.....	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	28.03	711.9	29.68	753.9	56	13.3	68	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.52	749.8	29.99	761.7	58	14.4	76	S	8	3.6	.....	Haze	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.52	749.8	30.17	766.3	42	5.6	66	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Decatur, Texas	28.75	730.2	29.91	759.7	55	12.8	87	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.12	739.6	29.91	759.7	58	14.4	82	S	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	24.77	629.2	29.99	761.7	35	1.7	61	N	2	0.9	.....	.....	8s	.....	Calm	0	0	Cloudy	
Des Moines, Iowa	29.25	742.9	30.16	766.1	39	3.9	82	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Detroit, Michigan	29.42	747.3	30.11	764.8	37	2.8	81	W	3	1.3	.....	10cs	Fog	Calm	Calm	0	0	Cloudy	
Dodge City, Kansas	27.34	694.4	29.68	753.9	36	2.2	61	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.45	748.0	30.18	766.6	39	3.9	64	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Duluth, Minnesota	29.48	748.8	30.19	766.8	32	0.0	69	NW	4	1.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Eagle Pass, Texas	29.21	741.9	29.96	761.0	50	10.0	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Eastport, Maine	29.68	753.9	29.75	755.6	51	10.6	86	E	20	8.9	.....	.....	10s	.....	E	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	68	14.4	82	S	.....	.....	1	0	0	.....	.....	0	0	Clear	
El Paso, Texas	.....	.....	.....	.....	60	15.6	37	W	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.39	746.5	30.11	764.8	44	6.7	84	S	8	3.6	.....	0	0	.....	.....	0.56	14.2	Clear	
Escanaba, Michigan	29.44	747.8	30.12	765.0	30	— 1.1	78	W	8	3.6	.....	2k	0	W	.....	0	0	Clear	
Florence, Arizona	28.37	720.6	29.97	761.2	55	12.8	39	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.52	648.2	29.58	751.3	38	3.3	46	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Fort Davis, Texas	25.20	640.1	30.16	766.1	60	15.6	23	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.35	745.5	29.88	758.9	58	14.4	76	SE	12	5.4	.....	0	Sm'e	.....	SE	0	0	Smoky	
Fort Griffin, Texas	28.59	726.2	29.83	757.7	60	15.6	44	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	27.74	704.6	29.63	752.6	58	14.4	64	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.63	727.2	29.73	755.1	49	9.4	57	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Fredericksburg, Texas	28.27	718.0	29.80	756.9	62	16.7	46	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.05	763.3	30.10	764.5	72	22.2	54	S	9	4.0	.....	.....	10ks	.....	S	0	0	Cloudy	
Graham, Texas	28.79	731.3	29.82	757.4	58	14.4	53	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.46	748.3	30.11	764.8	46	7.8	69	N	15	6.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Indianapolis, Indiana	29.31	744.5	30.10	764.5	43	6.1	67	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Indianola, Texas	30.04	763.0	30.07	763.8	70	21.1	70	S	16	7.2	.....	0	8s	.....	S	0	0	Cloudy	
Jacksboro, Texas	28.73	729.7	29.84	757.9	57	13.9	58	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.18	766.6	30.20	767.1	52	11.1	54	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Keokuk, Iowa	29.46	748.3	30.10	764.5	40	4.4	73	NE	6	2.7	.....	.....	9s	.....	W	0	0	Cloudy	
Key West, Florida	30.05	763.3	30.08	764.0	68	20.0	74	NE	14	6.3	.....	1k	0	NE	.....	0	0	Clear	
Kittyhawk, North Carolina	30.09	764.3	30.11	764.8	51	10.6	72	NW	20	8.9	.....	0	0	.....	.....	1.09	27.7	Clear	
Knoxville, Tennessee	29.26	743.2	30.31	769.9	38	3.3	81	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
La Crosse, Wisconsin	29.40	746.7	30.16	766.1	37	2.8	80	N	4	1.8	.....	10ck	0	NW	.....	0	0	Cloudy	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	38	3.3	54	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.56	750.8	29.90	759.4	58	14.4	82	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Lead City, Dakota	24.80	629.9	30.08	764.0	23	— 5.0	100	W	8	3.6	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Leavenworth, Kansas	29.15	740.4	30.00	762.0	45	7.2	46	NE	12	5.4	.....	5ck	0	W	.....	0	0	Fair	
Los Angeles, California	29.52	749.8	29.86	758.4	52	11.1	66	N	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
Louisville, Kentucky	29.56	750.8	30.13	765.3	47	8.3	62	S	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Smoky	
Lynchburg, Virginia	29.50	749.3	30.20	767.1	47	8.3	61	W	4	1.8	.....	0	0	.....	.....	0.31	7.9	Clear	
Madison, Wisconsin	29.12	739.6	30.13	765.3	41	5.0	57	NW	8	3.6	.....	1c	5s	W	N	0	0	Fair	
Marquette, Michigan	29.34	745.2	30.06	763.5	37	2.8	81	W	4	1.8	.....	5k	0	W	.....	0	0	Fair	
Mason, Texas	28.33	719.6	30.08	764.0	56	13.3	87	Calm	0	0	.....	Haze	Haze	Calm	.....	0	0	Hazy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.36	745.7	30.11	764.8	42	5.6	58	W	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Mobile, Alabama	30.20	767.1	30.24	768.1	48	8.9	85	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.03	762.7	30.27	768.8	44	6.7	84	N	3	1.3	.....	0	Sm'e	.....	Calm	0	0	Clear	
Morgantown, West Virginia	29.11	739.4	30.19	766.8	40	4.4	82	SW	2	0.9	.....	0	Fog	.....	Calm	0.26	6.6	Clear	
Mt. Washington, N. H.	23.54	597.9	29.90	759.4	29	— 1.7	100	NW	32	14.3	.....	.....	Fog	.....	NW	2.37	60.2	Foggy	
Nashville, Tennessee	29.66	753.4	30.21	767.3	45	7.2	76	Calm	0	0	.....	0	Sm'e	.....	Calm	0	0	Clear	
New Haven, Connecticut	29.71	754.6	29.82	757.4	52	11.1	60	NW	24	10.7	.....	0	0	.....	.....	0.64	16.3	Clear	
New London, Connecticut	29.73	755.1	29.78	756.4	54	12.2	55	NW	20	8.9	.....	0	0	.....	.....	0.89	22.6	Clear	
New Orleans, Louisiana	30.14	765.5	30.20	767.1	56	13.3	87	Calm	0	0	.....	.....	Fog	.....	E	0	0	Foggy	
Newport, Rhode Island	29.67	753.6	29.72	754.9	54	12.2	67	W	20	8.9	.....	0	0	.....	.....	1.19	30.2	Clear	
New York, New York	29.77	756.1	29.95	760.7	48	8.9	56	W	18	8.0	.....	0	0	.....	.....	0.05	1.3	Clear	
Norfolk, Virginia	30.09	764.3	30.15	765.8	53	11.7	54	N	12	5.4	.....	0	0	.....	.....	0.62	15.7	Clear	
North Platte, Nebraska	27.16	689.8	29.82	757.4	32	0.0	85	NE	6	2.7	.....	5k	Calm	Calm	Calm	Inap.	Inap.	Cloudy	
Olympia, Washington Ter.	30.41	772.4	30.45	773.4	30	— 1.1	100	S	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Omaha, Nebraska	29.96	735.6	30.07	763.8	38	3.3	81	NW	1	0.4	.....	.....	10s	.....	NW	0	0	Cloudy	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.74	755.4	30.06	763.5	48	8.9	63	NW	15	6.7	.....	0	0	.....	.....	2.58	65.5	Clear	
Pembina, Dakota	29.34	745.2	30.22	767.6	23	— 5.0	86	N	4	1.8	.....	0	2s	.....	NW	Inap.	Inap.	Clear	
Philadelphia, Pa	29.98	761.5	30.03	762.7	49	9.4	51	NW	12	5.4	.....	0	Haze	.....	Calm	0.03	0.8	Clear	
Phœnix, Arizona	28.76	730.5	.....	.....	63	17.2	42	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.63	447.1	29.84	757.9	10	—12.2	58	SW	32	14.3	.....	5cs	0	SW	.....	0.01	0.3	Fair	
Ploche, Nevada	24.11	612.4	29.68	753.9	34	1.1	43	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.17	766.3	40	4.4	82	Calm	0	0	.....	0	Fog	.....	Calm	0.43	10.9	Clear	
Port Huron, Michigan	29.43	747.5	30.11	764.8	40	4.4	73	SW	5	2.2	.....	8cs	0	W	.....	0	0	Fair	
Portland, Maine	29.54	750.3	29.58	751.3	53	11.7	94	N	.....	.....	.....	.....	10n	.....	Calm	2.63	66.8	Light rain	
Portland, Oregon	30.46	773.7	30.57	776.5	34.0	1.1	100	S	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Prescott, Arizona	24.77	629.2	30.13	765.3	41	5.0	67	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Punta Rassa, Florida	30.14	765.5	30.15	765.8	59	15.0	59	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.74	755.4	30.09	764.3	61	16.1	12	N	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.86	758.4	30.08	764.0	65	18.3	73	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.46	748.3	30.08	764.0	41	5.0	82	W	9	4.0	.....	0	0	.....	.....	2.10	53.3	Clear	
Roseburg, Oregon	29.89	759.2	30.50	774.7	30.5	— 0.8	94	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.89	759.2	29.98	761.5	54	12.2	32	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.07	763.8	45	7.2	68	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.21	767.3	30.22	767.6	46	7.8	77	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.29	744.0	30.15	765.8	32	0.0	69	NW	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	33.0	0.6	51	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.86	745.7	29.94	760.5	54	12.2	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.88	757.7	29.91	759.7	51	10.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.45	748.3	30.14	765.5	43	6.1	75	SW	7	3.1	.....	1c	0	Calm	.....	0	0	Clear	
Sandy Hook, New Jersey	29.90	759.4	29.94	760.5	50	10.0	62	W	24	10.7	.....	0	0	.....	.....	0.32	8.1	Clear	
San Francisco, California	29.91	759.7	29.97	761.2	54	12.8	25	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	29.20	689.3	29.74	755.4	37	2.8	38	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.13	765.3	30.23	767.8	51	10.6	72	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.88	758.9	30.10	764.5	52	11.1	79	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.28	616.7	.....	.....	40	4.4	32	W	2	0.9	.....	0	2s	.....	Calm	0	0	Fair	
Smithville, North Carolina	30.16	766.1	30.20	767.1	60	15.6	58	N	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Springfield, Massachusetts	29.70	754.4	29.82	757.4	53	11.7	61	NW	15	6.7	.....	5k	0	NW	.....	0.72	18.3	Fair	
Stockton, Texas	26.97	685.0	29.97	761.2	60	15.6	44	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.56	750.8	29.61	752.1	53	11.7	86	NW	28	12.5	.....	.....	10s	.....	NW	1.96	49.8	Cloudy	
Toledo, Ohio,	29.42	747.3	30.10	764.5	43	6.1	75	SW	2	0.9	.....	5c	Fog	Calm	Calm	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	62	16.7	36	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.16	766.1	30.20	767.1	53	11.7	67	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	30.11	764.8	.....	.....	29.0	— 1.7	83	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	SE	.....	.....	1	.....	10s	.....	SE	1.05	26.7	Cloudy	
Uvalde, Texas	29.11	739.4	29.92	760.0	61	16.1	82	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.96	761.0	30.22	767.6	51	10.6	65	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.81	617.5	29.79	756.7	17	— 8.8	83	NW	6	2.7	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	
Visalia, California	29.61	752.1	29.98	761.5	48	8.9	92	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.02	762.5	30.13	765.3	49	9.4	64	NW	10	4.5	.....	0	0	.....	.....	0.04	1.0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	45	7.2	63	N	.....	.....	1	8c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.10	764.5	30.18	766.6	45	7.2	84	N	4	1.8	.....	0	0	.....	.....	0.02	0.5	Clear	
Winnemucca, Nevada	25.87	657.1	30.23	767.8	19	— 7.2	69	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.61	752.1	29.66	753.4	56	13.3	62	NW	24	10.7	.....	.....	10s	.....	NW	1.31	33.3	Cloudy	
Yankton, Dakota	28.89	733.8	30.25	768.3	30	— 1.1	78	NE	2	0.9	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.67	753.6	29.84	757.9	58	14.4	57	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
St. Paul's Island, Alaska	.....	.....	.....	.....	0.5	—17.5	85	W	4	1.8	.....	0	1s	.....	W	0.01	0.3	Fair	J. Fortescue, W. Wood.
York Factory, B. A.	30.10	764.5	30.15	765.8	73	22.8	63	E	1.2	0.5	.....	2k	0	E	.....	0	0	Fair	Chas. Hasselbrink.
Havana, Cuba. W. I.	30.04	763.0	30.06	763.5	79	26.1	82	N	.....	.....	1	0	2s	.....	.....	.....	.....	.....	Robert Mason.
Santiago de Cuba, W. I.	29.93	760.2	29.96	761.0	85	29.4	79	E	3	1.3	.....	2c	2n	NE	.....	0	0	Cloudy	G. O. Gellich.
St. Thomas, W. I.	.....	.....	.....	.....	79	26.1	95	Calm	0	0	.....	8c?	5n?	Calm	NE	0	0	.....	James Gall.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	88	28.3	.....	NE	21.2	9.5	.....	.....	.....	.....	.....	0.05	1.3	Partly cl'dy	F. M. Everett.
Navassa, W. I.	29.84	757.9	29.92	760.0	84	28.9	79	NE	.....	.....	2	5k?	8ks?	E	.....	0.010	0.25	⅝ cloudy	C. J. Hering
Paramaribo, D. Guiana, S. A.	29.96	761.0	29.96	761.0	84	28.9	79	Calm	0	0	.....	.....	10n	.....	.....	0.16	4.1	.....	Thomas Herran.
Medellin, Colombia, S. A.	25.22	640.6	.....	.....	64.0	17.8	84	E	.....	.....	.....	c	.....	.....	.....	.....	.....	.....	Robert Elworthy.
Portland, Jamaica, W. I.	29.75	755.6	30.66	778.7	78	25.6	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,102 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,862.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.30	769.6	54	12.2	54	12.2	67	N	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H.	29.96‡	761.0‡	.....	.....	51	10.6	65	N	4	1.8	.....	.....	10	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.94*	760.5*	65	18.3	62.8	17.1	62	N	.....	.....	3	.....	4k	.....	N	0.36	9.1	.....	.....	Clearing.....	
Adams. Valparaiso, Chili.....	30.06	763.5	62	16.7	59	15.0	94	Calm	.....	.....	0	.....	2	.....	.....	.....	.....	Smooth	.....	Fair	
Alaska. Callao, Peru.....	30.13	765.3	68	20.0	61	16.1	88	E	.....	.....	1	.....	10	.....	E	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	29.93‡	760.2‡	.....	.....	74	23.3	72	WNW	.....	.....	1	.....	7	.....	W	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.01	762.2	69	20.6	68	20.0	65	NE	.....	.....	3	.....	8	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.10	764.5	43	6.1	53	11.7	86	SE	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Colorado, New York, N. Y.....	29.95‡	760.7‡	.....	.....	51	10 6	59	NW	28	12.5	.....	.....	2	.....	NW	0.52	13.2	.....	.....	Clear.....	
Constitution, Havre, France.....	.....	.....	.....	.....	58	14.4	??	SSW	.....	.....	4	.....	10	.....	Calm	.....	.....	.....	.....	Rainy	
Despatch, Constantinople, Turkey	29.99‡	761.7‡	.....	.....	69	20.6	60	SE	.....	.....	1	.....	8	.....	S	.....	.....	.....	.....	Cloudy.....	
Essex, Cape Town.....	29.95	760.7	62	16.7	62	16.7	88	NW	.....	.....	6	.....	8	.....	NW	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.24	768.1	65	18.3	58	14.4	87	N	16	7.2	.....	.....	0	.....	.....	0.5	13.	.....	.....	Clear.....	
Gettysburg Jaffa, Syria.....	29.92‡	760.0‡	.....	.....	78	25.6	95	WNW	.....	.....	3	.....	2	.....	.....	0	0	Smooth	W	D. clouds.....	
Guard. N 12° 25′, W. 45° 30′.....	29.97	761.2	84	28.9	84	28.9	79	ESE	.....	.....	3	.....	2	.....	ESE	.....	.....	Smooth	.....	Fair	
Hartford, St. Catherine Strait.....	30.00	762.0	74	23.3	76	24.4	64	ENE	6.0	2.7	.....	.....	0	.....	.....	0	0	Smooth	.....	Clear	
Marion, N. 42° 44′, E. 15° 51′.....	30.01	762.2	71	21.7	72	22.2	80	SSE	.....	.....	2	.....	8	.....	SE	0	0	Smooth	SE	Fair.....	
Michigan, Erie, Pa.....	30.05†	763.3†	.....	.....	43	6.1	92	S	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Monocacy. Yokohama, Japan	29.96‡	761.0‡	.....	.....	63	17.2	72	N	.....	.....	2	.....	10	.....	N	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.....	30.33	770.4	56	13.3	58	14.4	53	N	7	3.1	.....	.....	0	.....	.....	0.3	8.	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.08†	764.0†	.....	.....	63	17.2	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.14	765.5	64	17.8	54	12.2	93	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Passaic, Washington, D. C.....	.....	.....	.....	.....	50	10.0	100	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. St. Thomas, W. I.....	30.09	764.3	85	29.4	84	28.9	91	SE	.....	.....	0–1	.....	2?	.....	E	.....	.....	.....	.....	Cloudy.....	
Powhatan, New York, N. Y.....	29.95‡	760.7‡	.....	.....	52	11.1	60	NW	9.0	4.0	.....	.....	.....	.....	.....	0.32	8.1	.....	.....	Clear	
Quinnebaug, Norfolk, Va.....	30.15‡	765.8‡	.....	.....	54	12.2	67	WNW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger. Hong-Kong, China.....	30.10	764.5	83	28.3	82	27.8	83	E	.....	.....	1	.....	8	.....	Calm	.....	.....	.....	.....	Cloudy	
Rio Bravo, Brownsville, Texas.....	30.00	762.0	65	18.3	65	18.3	100	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	30.07‡	763.8‡	.....	.....	51	10.6	59	NW	.....	.....	2	.....	0	.....	.....	0.04	1.0	.....	.....	Clear.....	
Saratoga, Philadelphia, Pa.....	29.95	760.7	.....	.....	48	8.9	63	W	.....	.....	3	.....	0	.....	.....	Mod'ate	Mod'ate	.....	.....	Clear.....	
St. Louis, League Island, Pa	29.96	761.0	65	18.3	50	10.0	72	NW	18	8.0	.....	.....	0	.....	.....	0.37	9.4	.....	.....	Clear.	
Supply, Havre, France.....	29.44	747.8	61	16.1	60	15.6	94	SW	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
Swatara, Boston, Mass.....	29.66‡	753.4‡	.....	.....	56	13.3	69	NW	.....	.....	4	.....	8	.....	.....	.....	.....	.....	.....	Squally.....	
Trenton, Villafranca, France.....	29.75‡	755.6‡	.....	.....	74	23.3	60	SW	.....	.....	2	.....	2	.....	S;W	0	0	.....	.....	Clear	
Vandalia. Villafranca, France	29.99‡	761.7‡	.....	.....	69	20.6	65	SSW	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	Clear.	
Wabash. Boston, Mass.....	.....	.....	.....	.....	55	12.8	62	NW	17	7.6	.....	.....	10	.....	.....	1.82	46.2	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Low'r 0—10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 32° 28′, E. 133° 20′		29.97*	761.2*	71	21.7	95	NE			5		9		NE		Small	NE	D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 28° 19′, W. 115° 46′		29.94*	760.5*	60	20.6	??	Calm			0		0			0	Very small	W	Misty.	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Tacoma, W. T.		30.43*	772.9*	49	9.4	63	Calm			0		0			0			Foggy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 47° 48′, W. 38° 05′		30.15†	765.8†	55	12.8		ENE			6		5clr		ENE	0	High	NE	Squally	Capt. W. H. Thompson.
S. S. Celtic, New York, N. Y.		30.04*	763.0*	45	7.2	??	N			6				N	0			D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic																			Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 46° 39′, W. 39° 27′		29.93	760.2	58.0	14.4	94	ENE			6		10		ESE	16hours	7	ESE	Stormy	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S.S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall of melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, Philadelphia, Pa		30.01*	762.2*	54	12.2	93	W			5		7		W	0			Cloudy	Captain Sargent.
S. S. Ohio, St. George's Channel		29.17	740.9	53	11.7	86	NW			4		6		W		Small	NW	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 45° 05′ W. 53° 09′		29.93*	760.2*				NE	25	11.2			10		NE		Heavy	NE	Misty	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, Porto Cabello, Venezuela		29.85	758.2	82	27.8	79	Calm	0	0			58		Calm	0.46 in or 11.7 mm.				Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 25, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.01	762.2	72.1	22.3	74	NNW	.....	.....	1	.....	0	.....	.....	0	0	Clear	Kesxuche.
Algiers	.....	.....	29.93	760.2	74.1	23.4	60	SW	.....	.....	1	.....	0	.....	.....	0	0	Clear.	Tourilliere.
La Calle	.....	.....	29.98	761.6	77.4	25.2	82	E	.....	.....	3	.....	2	.....	.....	0	0	Fair	Foufrede.
Tunis	.....	.....	30.00	762.0	81.3	27.4	52	WSW	.....	.....	4	.....	3	.....	.....	0	0	Pretty fair	Jaoques.
Sfax	.....	.....	30.12	765.0	78.8	26.0	.....	NNE	.....	.....	5	.....	2	.....	.....	0	0	Fair	Gau.
Saida	.....	.....	29.98	761.5	77.0	25.0	28	S	.....	.....	3	.....	2	.....	.....	0	0	Fair.	Herbin.
Tebessa	.....	.....	29.99	761.7	73.4	23.0	47	SW	.....	.....	5	.....	4	.....	.....	0	0	Cloudy	Watrin.
Geriville	.....	.....	30.01	762.3	67.3	19.6	27	S	.....	.....	3	.....	0	.....	.....	0	0	Clear	Brugniaux.
Laghouat	.....	.....	30.05	763.3	70.2	21.2	21	Calm	.....	.....	0	.....	0	.....	.....	0	0	Clear	Bertrand.
Biskra	.....	.....	30.09	764.2	77.9	25.5	44	N	.....	.....	1	.....	2	.....	.....	0	0	Fair	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann. Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.29	744.0	29.82	757.5	67.3	19.6	53	SW	.....	.....	5	.....	6	.....	.....	0	0	.....	Prof. Ivan Storlr.
Cracow, I. R. Observatory	28.97	735.8	29.72	754.9	61.9	16.6	66	S	.....	.....	1	.....	8	.....	.....	0	0	.....	Dr. Wierzbiski
Eperies	29.01	736.9	29.89	759.2	52.5	11.4	81	S	.....	.....	3	.....	9k;s	.....	N	0	0	.....	Julius Mikolik.
Gratz	28.50	724.0	29.73	755.2	58.3	14.6	76	SW	.....	.....	3	.....	6	.....	.....	0.006	0.15	.....	Andreas Rospini.
Hermannstadt	28.52	724.3	29.98	761.5	61.2	16.2	51	ESE	.....	.....	3	.....	2	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.28	718.4	29.60	751.9	54.0	12.2	73	E	.....	.....	2	.....	5	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.90	734.1	29.88	759.0	58.3	13.5	66	SE	.....	.....	2	.....	5	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.79	756.6	29.90	759.4	66.2	19.0	69	SSW	.....	.....	2	.....	10cks	.....	.....	0	0	.....	I.R.Hydrographic Office
Szathmar	29.58	751.3	30.04	763.0	61.2	16.2	55	SE	.....	.....	3	.....	3	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.63	752.6	29.90	759.5	66.6	19.2	68	SE	.....	.....	3	.....	3	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.81	757.2	29.91	759.8	62.6	17.0	96	Calm	.....	.....	0	.....	2	.....	.....	0	0	.....	P. Busin.
Vienna	28.97	735.7	29.66	753.4	59.9	15.5	65	SE	.....	.....	2	.....	1	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.209	5.3	.....	Prof. M. Passau.
Brussels	29.10	739.0	29.30	744.1	47.7	8.7	90	SW	.....	.....	2	.....	10	.....	SW	0.293	7.45	.....	Royal Observatory
Furnes	29.26	743.1	29.28	743.7	48.6	9.2	90	SSW	.....	.....	4	.....	10	.....	.....	0.236	6.0	.....	M. E. de Cae
Maeseyck	29.19	741.4	29.32	744.7	47.5	8.6	93	WSW	.....	.....	2	.....	10	.....	.....	0.307	7.8	Raining	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

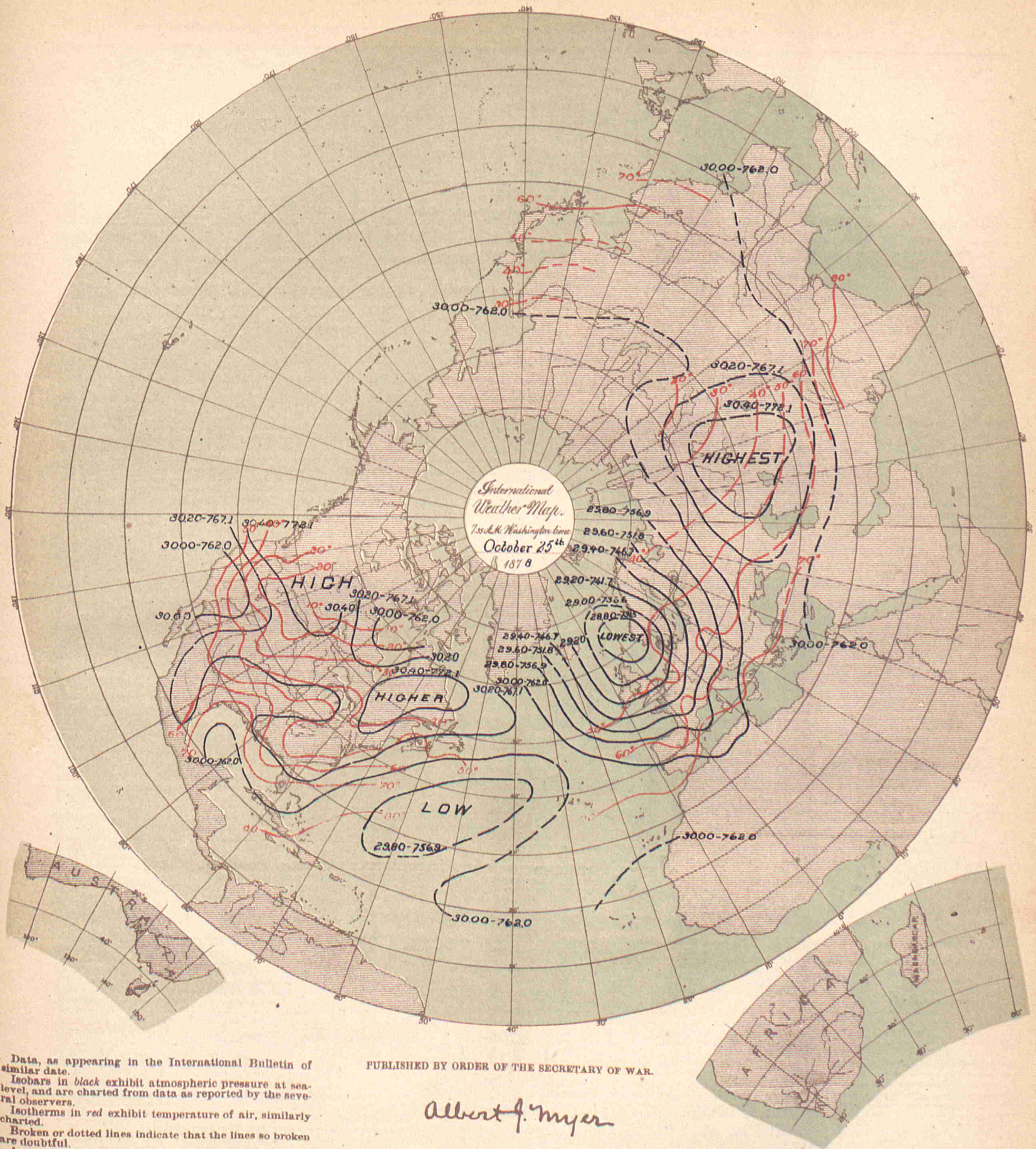
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Low'r. 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.
Aberdeen	28.85	732.8	28.95	735.3	47.1	8.4		W	2	0.9			2			0.120	3.05	Blue sky	W. Boswell.
Ardrossan	28.95	735.3	28.97	735.8	47	8.3		WSW			3		9					Overcast	George Carrick.
Armagh, Observatory			29.07	738.4	45.0	7.2		SW	10	4.5			10					Showery	S. Call.
Bidston, (Liverpool Obs.)			29.10	739.1	50.1	10.1		W	28	12.5			7					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.70	729.0	29.09	738.9	49.1	9.5		W			2		8			0.40	10.2	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.82	757.4	29.85	758.2	83.0	28.3		NE			2		3					D. clouds	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.18	741.2	53.0	11.7		SW			1		7					D. clouds	H. Todd.
Cardington			29.21	741.9	53.0	11.7		W			1		6					D. clouds	John McLaren.
Chatham, School M. E.	29.10	739.1	29.23	742.4	54.7	12.6		SW			2		5					Blue sky	Lt. G. W. Morris, R. E.
Dartmoor	27.79	705.8	29.24	742.7	46.0	7.5		W			3		5					Showery	Alexander Watt.
Donaghadee	29.00	736.6	29.03	737.3	46	7.8		WSW			3		5					D. clouds	J. Mac Gowan.*
Dover	29.21	741.9	29.24	742.7	52	11.1		W			3		10					Overcast	J. Costello.
Falmouth, Observatory	29.13	739.9	29.36	745.7	51.7	10.9		WNW			4		6					Overcast	The Staff.
Fort Napier, (Natal)	27.46	697.5	29.78	756.4	79.5	26.4		E			2		0					Blue sky	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	85	29.4		Calm			0		5					D. clouds	
Galway, Queen's College			29.10	739.1	46	7.8		NW			2		10					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.96	761.0	30.01	762.2				N			2		2					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	28.77	730.7	28.97	735.8	44.4	6.9		SW			4		10					Threatening	D. G. Maclean.
Great Yarmouth	29.17	740.9	29.17	740.9	52	11.1		WSW			2		4					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.05	737.9	29.22	742.2	52.8	11.6		WSW			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.14	740.1	29.36	745.7	54.5	12.5		WNW			4		5					Squally	Dr. S. E. Hoskins, F. R. S.
Helston			29.38	746.2	50	10.0		SW			6		ck			0.33	8.4	Showery	M. P. Moyle.
Holyhead	29.08	738.6	29.13	739.9	50	10.0		WSW			4		8					D. clouds	John Tilston.
Jerse	29.10	739.1	29.39	746.5	52.0	11.1		WNW			5		7					Showery	J. Fisher.
Kew, Observatory	29.20	741.7	29.23	742.4	53.1	11.7		WSW	12	5.4			9					Misty	The Staff.
Kingstown	29.11	739.4	29.14	740.1	50	10.0		W			4		10					Overcast	George Mitchell.
Leicester, Museum			29.15	740.4	54.0	12.2		NW			1		10					Overcast	Wm. J. Harrison, F. G. S.
Malta, (Mediterranean)	29.91	759.7	29.98	761.5	77	25.0		NW			1		4k					D. clouds	Sergt. Beckett.
Nairn	28.82	732.0	28.91	734.3	46	7.8		SW			1		2					¼ clouded	W. D. Penny.
Nassau, (Bahamas)			30.06	763.5	78.0	25.6		NE			4		6					D. clouds	C. S. Duncombe.
Nottingham, Observatory	28.98	736.1	29.16	740.7	53.0	11.7		WSW			4		7k;ks;d		WSW	0.007	0.18	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.65	727.7	29.16	740.7	49.0	9.4		SW			2		9					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.22	742 2	52	11.1		W			2		3					Blue sky	H. E. Bellamy.
Plymouth	29.23	742.4	29.30	744.2	55.2	12.9		WSW			4		10					Overcast	John Merrifield.
Roche's Point	29.22	742.2	29.26	743.2	50	10.0		W			4		8					Cloudy	W. Kennedy.
Saint Ann's Head	29.08	738.6	29.24	742.7	52	11.1		W			6		5					Squally	John C. Walker.
Sandwick Manse, (Orkneys.)			28.89	733.8	45.2	7.3		WSW	8	3.6			0					Blue sky	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.04	763.0	71.4	21.9		NE			2		2					D. clouds	Sergt. W. H. Lyne.
Sheffield	28.86	733.0	29.13	739.9	49.8	9.9		SW			2		9			0.12	3.0	Showery	W. F. Cooper.
Silloth, Rectory	28.98	736.1	29.01	736.8	45.8	7.7	82	W			2		5			0.240	6.10	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	28.70	729.0	29.11	739.4	48.1	8.9		W			3		7					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.03	737.3	29.24	742.7	53.2	11.8		NW			2		0					Blue sky	Rev. C. H. Griffith, F. M. S.
Thurso	28.84	732.5	28.90	734.0	49	9.4		SW			2		2					Blue sky	John Trotter.
Truro, Royal Institution			29.36	745.7	57	13.9		W			6		4					D. clouds	W. Newcombe.
Valencia, Observatory	29.26	743.2	29.28	743.7	48.1	8.9		W	23	10.3			10			Blank	Blank	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)			29.76	755.9	46.0	7.8	75	SW			2		0			0.09	2.3		Francis Abbott, F. R. A. S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	79.0	26.1	54	ESE	15.0	6.7		0	2		ESE	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.02	762.5	30.11	764.8	50.2	10.1	77	W	6	2.7			7			0	0	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Barometer. Corrected. Inches.	Millimeters.	Reduced. Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind. From—	Miles per hour.	Meters per second.	Force.	Clouds. Up'er.	Low'r.	Direction. Upper.	Lower.	Sea or swell. Height scale 0—9	Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 0′, W. 43° 25′			29.97	761.2	55	12.8		ENE			7		4			7	Confused.	Squally	Capt. Alex. Wilson.
Barque Commewyne, N. 25° 20′, W. 49° 35′			30.00	762.0	81	27.2		WSW			3		3			2	WSW	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle, N. 42° 0′, W. 52° 50′			29.65	753.1	58	14.4		ENE			6		7			6	ENE	Foggy	Capt. W. Waring.
Barque Margaret Smith, N. 23° 5′, W. 82° 35′			30.08	764.0	79	26.1					6		9			7	NE	D. clouds	Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			
San José	26.20	665.5	29.92	760.0	67.1	19.5	95	SE			2	4s	5s			0	0		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.18	741.2	29.23	742.4	51.1	10.6	75	SSW			4		10						
Fanöe	29.05	737.9	29.07	738.4	52.0	11.1	81	WSW			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	28.78	730.9	28.81	731.8	45.1	7.3	85	SE			2		5						
Vestervig	28.82	732.0	28.99	736.3	50.4	10.2	95	SW			7		6					Thunder-storm.	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	28.95	735.3	29.50	749.3	51.4	10.8	93	SW			3		8		SW	1.476	37.5	Very cloudy	Colignon, Director.
Amiens, Normal School	29.26	743.1	29.37	746.9	51.8	11.0	90	SW			2				NE	0.520	13.2		Bonvallet, Director.
Avignon, Normal School	29.65	753.2	29.73	755 2	67.3	19.6	76	SSE			3		8	WSW	S	0.08	2.	Rainy	M. Giraud, Director.
Bar-sur-Seine	28.96	735.6	29.41	746.9	53.1	11.7	93	W			4		10		W	0.835	21.2	Raining	C. Saillard.
Beauvais, Normal School	29.10	739.2	29.39	746.4	53.8	12.1	68	W			3		8		W	0.896	22.75	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.66	728.0	29.54	750.3	64.4	18	80	SSW			8		10		SW	0.177	4.5	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	28.72	729.5	29.63	752.6	60.4	15.8	89	S			6	5c		S		0	0	Cloudy	M. Marlot, Director.
Bourges, Normal School	28.98	736.0	29.52	749.9	57.4	12.6	95	WSW			6		8k		WSW	0.496	12.60	Very cloudy	V. Waquet Director
Brest, Naval Observatory	29.20	741.7	29.45	747.9	58.3	14.6	76	W			4		5		WNW	0.138	3.50	Squally	M.de Rermaur, Director.
Carcassonne, Normal School	29.25	743.0	29.66	753.4	68.0	20	74	E			2		8	W	W	0	0	Very cloudy	Septembre, Director.
Caen	29.35	745.6	29.43	747.5	51.8	11	83	SW			2		2		W	0.20	5.	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	28.95	735.4	29.52	749.7	52.5	11.4	93	W			2		4		E	1.65	42.		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.08	738.6	29.39	746.5	54.7	12.6	77	SW			4		8ck		SW	1.181	30.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.23	717.1	29.55	750.6	60.1	15.6	66	SSW			3		8	W	SW	0	0	Very cloudy	Allnard, Director.
Commercy, Normal School	29.01	736.8	29.45	748.1	51.8	11	95	W			6		10n		W	1.18	30.	Raining	Dr. Coulet, Director.
Commune de Grêasque*	28.70	729.0	29.84	758.0	63.9	17.7	82	SE			4		10	S		0.102	2.6	Covered	N. Kina.
Grenoble, Normal School	28.87	733.3	29.61	752.1	64.8	18.2	62	SSW			3		10n		S	0	0	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.32	744.8	29.54	750.2	56.5	13.6	76	W			1		5		W	0.992	25.2	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.19	741.3	29.49	749.0	52.2	11.2	75	NW			8		8			1.718	43.60	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.63	727.3	29.52	749.8	62.2	16.8	81	SW			8		10		SW	0.12	3.	Raining	Baudry, Director.
Lorient, Naval Observatory	29.41	746.9	29.50	749.4	55.4	13.0	83	W			6			W	W	0.315	8.0		Lt T. Carré, Director.
Mâcon, Normal School	29.61	752.0	29.64	752.8	57.2	14	82	SE			1		0			0	0	Clear	M. Galxin, Director
Mirecourt, Normal School	28.41	721.5	29.43	747.4	57.2	14	89	WSW			6		10n		NE	0.28	7.	Covered	M. Barbier, Director.
Nismes, Normal School	29.52	749.8	29.72	754.8	69.8	21	75	S			3		2		S	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.65	727.7	29.09	754.1	62.6	17	80	S			4		8	S	S	0.24	6.	Very cloudy	M. Cantier.
Puy de Dome (Summit)	24.79	629.6			42.6	5.9	100	W			8		Fog			0.106	2.7	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	29.59	751.5	29.62	752.3	59.4	15.2	78	WSW			4		5	W	W	0.20	5.	⅛ covered	Lt. Decante, Director.
Rouen, Normal School	29.28	743.6	29.36	745.8	53.6	12.0	70	S			1		5		SW	0.539	13.7	Cloudy	Frere Lucard, Director.
Saint Malo (Port)			29.42	747.2	52.0	11.1	75	WSW			4		8		W	0.596	15.14	Very cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.25	742.9	29.41	747.1	52.5	11.4	73	SW			1-2		9	SW	wsw;w	0.890	22.6		E. Renou.
Tarbes, Normal School	28.63	727.2	29.74	755.3	59.0	15	79	SW			2		10			0.71	18.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S. Sub-Series.	28.89	733.8	29.58	751.4	63.5	17.5	70	S			4		10		NW	0	0	Covered	M. Gausserand, Director
Fort de France, Martinique	29.82	757.5	29.85	758.2	82.4	28										0	0		L'Abbé Marchés.
Lyons, Observatory			29.60	751.9	64.2	17.9	70						9			0	0		
Marseilles, Observatory			29.78	756.5	68.2	20.1	78	S			2		10			0	0		
Mont-Louis	24.68	626.9	30.00	761.9	53.6	12.0	48	SSW			6		2		W	0	0	Covered	The Staff.
Nice			29.86	758.5	63.3	17.4	86	W			1		10			0	0		M. Cave.
Paris, Montsouris Obs'y	29.12	739.7	29.40	746.7	54.0	12.2	71	WSW			4		7			0.091	2.3	Heavy rain.	Dr. A. Niepce.
Perpignan			29.68	753.8	64.0	17.8	76	NE	3.7	1.67			7		WSW	1.291	32.8		Marié Davy, Director
Pic du Midi, (Summit,) H. P.															SW	0	0		Dr. Fines.
Pic du Midi, (Plantade,) H. P.	22.34	567.3			40.6	4.8		SW			3		10						M. Raylac.
Toulouse, Observatory	29.02	737.0	29.76	755.8	67.1	19 5	61	NW			1		9			0.083	2.1	Snowy	Gen'l de Nansouty
Tours	29.31	744.4	29.50	749.4	55.6	13.1	72	W			4		7		WNW	0.409	10.40		B. Bailand.
Versailles			29.41	746.9	54.3	12.4	52	W			1		8			1.110	28.2		C. Marquet.
Zi-Ka-Wei, (near Shanghai)	30.06	763.5	30.09	764.2	51.4	10.8	94	W	1.1	0.5			10n			1.393	35.36	Very cloudy	Dr. A. Bérigny.
																0.201	5.1	Raining	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grêasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grêasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,206.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.64	727.5	29.47	748.5	57.2	14.0	78	SW	.....	.....	5	.....	9	W	.....	0.492	12.5	Raining.....	Prof. Dr. Hoh.
Berlin	29.21	741.8	29.37	746.1	56.8	13.8	86	S	.....	.....	3	.....	10	.....	.....	0.201	5.1	Raining	Prof. Arndt.
Breslau	29.11	739.3	29.63	752.6	59.7	15.4	63	S	.....	.....	6	.....	10	.....	.....	0.034	0.86	.....	Royal University Obs'y
Carlsruhe	28.97	735.8	29.37	746.1	65.8	18.8	56	SW	.....	.....	8	.....	10	.....	.....	0.441	11.2	Raining.....	Albert Sens.
Cassel	28.66	728.0	29.25	743.0	58.5	14.7	80	WSW	.....	.....	4	.....	9	WSW	.....	0.240	6.10	.....	Dr. H. Möhl.
Crefeld	29.10	739.2	29.26	743.2	47.8	8.8	93	W	.....	.....	4	.....	10	.....	.....	0.43	11.	Raining	Director Lose.
Emden	29.25	743.0	29.29	743.9	49.3	9.6	95	SW	.....	.....	3	.....	10	.....	.....	0.370	9.4	.....	Prof. Prestel.
Frankfort on the Main	29.08	738.6	29.44	747.7	53.2	11.8	.....	SSW	.....	.....	5	.....	10	.....	.....	0.713	18.1	Raining	Physical Society.
Friedrichshafen	28.11	714.0	29.51	749.5	59.0	15.0	73	S	.....	.....	3	.....	8	WSW	.....	0.461	11.7	.....	M. Wilhelm.
Hamburg	29.19	741.4	29.26	743.2	50.9	10.5	90	SSW	.....	.....	4	.....	10n	.....	.....	0.165	4.2	Raining	Captain F. Hegemann.
Kiel	29.19	741.4	29.21	741.8	51.3	10.7	78	SSW	.....	.....	3	.....	10	.....	.....	0.320	8.12	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.49	749.0	29.57	751.1	51.8	11.0	82	S	.....	.....	3	.....	8	.....	.....	0	0	.....	Prof. E Luther.
Köslin	.....	.....	29.39	746.5	55.6	13.1	.....	SW	.....	.....	4	.....	4	.....	.....	0.087	2.2	.....	H. Müller.
Leipsic, Observatory	29.00	736.6	29.41	747.0	59.5	15.3	74	S	.....	.....	4	.....	10	SW	.....	0.055	1.4	Raining	Prof. Bruhns.
Memel, Naval School	29.52	749.7	29.56	750.9	50.5	10.3	88	S	.....	.....	6	.....	10ks	.....	.....	.....	.....	.....	Reinbrecht and Skalweit.
Neufahrwasser	29 51	749.5	29.52	749.9	54.7	12.6	85	SSW	.....	.....	4	.....	10	.....	.....	0.024	0.6	.....	A. Lothes.
Posen	29.30	744.2	29.59	751.5	57.2	14.0	78	SSW	.....	.....	5	.....	10	.....	.....	0.098	2.5	.....	Dr. Magener.
Strassburg (in Alsace)	28.91	734.3	29.44	747.8	63.7	17.6	65	SW	.....	.....	6	.....	10	SW	.....	0.056	1.43	Raining	Astronomical Observatory.
Stuttgart	28.51	724.2	29.41	747.0	66.2	19.0	50	SW	.....	.....	5	.....	9	W	.....	0.555	14.1	.....	Prof. Schoder.
Treves, (Trier)	28.81	731.7	29.32	744.7	55.2	12.9	81	SW	.....	.....	8	.....	10	.....	.....	0.263	6.43	Foggy	Prof. Fiesch.
Weissenburg, (Bavaria)	28.06	712.6	29.52	749.7	57.6	14.2	59	SSW	8.5	3.8	.....	.....	9k	.....	W	0	0	Squally.....	Dr. Von Bebber.
Wustrow, Naval School	29.26	743.3	29.29	743.9	52.5	11.4	79	S	.....	.....	6	.....	10ks	.....	.....	0.378	9.6	.....	E. F. Schütz.
German Naval Series.																			
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NOTE—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.66	753.4	30.04	763.0	78.4	25.8	.....	NE	.....	.....	1.0	.....	.....	.....	.....	.....	.....	⅛ clear.....	Dr. J. F. J. Schmidt.
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NOTE—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	NNE	.....	0	0	D. clouds.....
Deesa	29.43	747.4	29.90	759.5	86.3	30.2	48	Calm	.....	.....	.....	.....	.....	.....	.....	0	0	D. clouds.....
Bombay	29.79	756.6	29.83	757.6	85.7	29.8	82	NNW	12	5.4	.....	.....	10	.....	NW	0	0	Overcast.....
Poona	27.82	706.6	29.82	757.4	78.6	25.9	72	S	.....	.....	.....	.....	9	.....	S	0	0	D. clouds.....
Lahore	29.10	739.1	29.85	758.2	75.4	24.1	46	Calm	0.8	0.4	.....	.....	.....	.....	.....	0	0	Blue sky.....
Belgaum	27.31	693.7	29.86	758.3	74.8	23.8	75	Calm	0	0	.....	.....	8	.....	E	0.06	1.5	D. clouds.....
Roorkee	28.92	734.5	29.82	757.4	78.6	25.9	39	NW	2	0.9	.....	.....	.....	.....	.....	0	0	.....
Agra	29.27	743.5	29.83	757.7	84.7	29.3	28	W	.....	.....	.....	.....	.....	.....	.....	0	0	.....
Nagpur	28.79	731.2	29.82	757.4	84.1	28.9	46	Calm	1.4	0.6	.....	.....	2	N	.....	0	0	.....
Lucknow	29.45	748.0	29.82	757.4	85.2	29.6	27	Calm	0.7	0.3	.....	.....	.....	.....	.....	0	0	Blue sky.....
Allahabad	29.51	749.6	29.82	757.5	77.2	25.1	46	Calm	0.9	0.4	.....	.....	0	.....	.....	0	0	Blue sky.....
Patna	29.65	753.1	29.83	757.8	78.5	25.8	71	NE	0.4	0.2	.....	.....	0	.....	.....	0	0	Blue sky.....
Hazaribagh	27.82	706.7	29.83	757.8	75.8	24.3	37	NW	4.4	2.0	.....	.....	0	.....	.....	0	0	Blue sky.....
Cuttack	29.74	755.3	29.82	757.4	85.0	29.4	61	NNE	1.1	0.5	.....	.....	.....	.....	.....	0	0	Blue sky.....
Calcutta (Alipore)	29.81	757.1	29.83	757.6	79.5	26.4	70	WNW	3.0	1.3	.....	.....	0	.....	.....	0	0	Blue sky.....
Goalpara	29.42	747.3	29.81	757.2	78.5	25.8	65	ENE	5.4	2.4	.....	.....	0	.....	.....	0	0	Blue sky.....
Chittagong	29.74	755.3	29.83	757.7	80.9	27.2	87	Calm	1.7	0.8	.....	.....	9	.....	.....	0	0	Misty.....
Sibsagar	29.64	750.2	29.88	758.8	73.8	23.2	81	ENE	3.2	1.4	.....	.....	6	.....	.....	0	0	D. clouds.....
Jubbulpore	28.50	723.8	29.85	758.2	85.0	29.4	36	Calm	2.2	1.0	.....	.....	0	.....	.....	0	0	Blue sky.....
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NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.51	749.5	29.91	759.8	59.5	15.3	75	N	0.7	0.3			9			0	0		Prof. Giovanni Clodig.
Padua	29.79	756.6	29.90	759.4	60.4	15.8	80	ENE	4.9	2.2			10	SW		0	0		Prof. Dott. Lorenzoni
Vicenza	29.71	754.5	29.90	759.4	59.2	15.1	77	NE	0	0			10	E		0	0		Cont. Alm. Da Schio.
Bergamo	28.57	725.6	29.89	759.2	52.5	11.4	88	NE			2		10			0.094	2.4		Prof. Trionfini Carlo.
Milan	29.34	745.1	29.85	758.2	55.9	13.3	92	ESE			1		10			0.500	12.7		Prof. Schiaparelli.
Moncalieri	28.93	734.7	29.83	757.7	52.9	11.6	98	NNW	2.5	1.1			10			0	0		Prof. P. F. Denza.
Mondovi	27.98	710.6	29.88	758.9	51.6	10.9	90	W			2		10			0	0		Prof. D. C. Bruno.
Porto Maurizio	29.61	752.1	29.83	757.7	62.6	17.0	90	W			2		10	SW		0.579	14.7		Prof. L. Vassallo.
Genoa	29.71	754.5	29.87	758.7	62.4	16.9	91	SE	11.9	5.3			10	S		0.890	22.6		Prof. G. M. Garibaldi.
Parma	29.56	750.7	29.87	758.6	59.0	15.0	85	ENE			4		10			0	0		Prof. P. Pigorini.
Florence	29.66	753.4	29.91	759.8	68.9	20.5	59	S			2		10	SW		0	0		Cav. F. Meucci
Leghorn	29.83	757.6	29.91	759.7	66.4	19.1	75	SW	6.9	3.1			10			0	0		Prof. P. Monte.
Pesaro	29.55	750.3	29.90	759.5	69.3	20.7	59	S	6.9	3.1			5			0	0		Prof. Luigi Guidi.
Urbino	28.45	722.7	29.98	761.6	61.0	16.1	43	SW			1		5			0	0		Prof. P. Serpieri
Rome	29.81	757.2	29.98	761.6	70.2	21.2	62	S	9.4	4.2			9			0.118	3.0		Prof. P. G. S. Ferrari.
Naples, O. U	29.84	757.9	30.04	762.9	72.9	22.7	54	SW			4		4	SW		0	0		Prof. L. Palmieri.
Lecce	29.76	755.8	30.00	762.1	73.8	23.2	49	WNW	2.5	1.1			4	W		0	0		Prof. C. De Giorgi.
Cagliari	29.76	755.8	29.95	760.6	71.4	21.9	68	SE			2		3	NW		0	0		Prof. A. Pacinotti.
Cosenza	29.13	739.9	30.00	761.9	75.6	24.2	71	SW			1		7			0.094	2.4		Prof. F. D. Conti.
Palermo	29.80	756.8	30.04	763.1	69.4	20.8	68	NE	3.1	1.4			1			0	0		Prof. G. Cacciatore.
Syracuse	30.00	761.9	30.07	763.8	72.1	22.3	60	E	6.8	2.8			2	W					Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.																			Prof. F. Brioschi

Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.81	757.2	30.01	762.2	62.6	17.0	69	NE	3.8	1.7			9s			0.015	0.38	Cloudy	
Tokei (Yeddo) Observatory	30.09	764.3	30.16	766.0	53.1	11.7	90	NNE	4.4	2.0			1s			0	0	Clear	I. Arai, Director.
Tokei (Yeddo) University																			Prof. P. V. Veeder.

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca					60.1	15.6	28	N			4	0	0			0	0	Very clear	P. Ceballos.
Guadalajara	25.08	637.0	30.24	768.2	45.0	7.2	63	S			1		1			0	0	Clear	Prof. L. Perez.
Leon	24.46	621.3	30.07	763.9	52.3	11.3	73	NW			1	0	0			0	0	Blue sky	Prof. M. Leal.
Mexico	23.13	587.4	30.30	769.6	44.6	7.0	78	Calm	0	0		0	0			0	0	Fair	Central Observatory.
Pabellon, (Aguascalts)					46.9	8.3	66	Calm			0	0	0			0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	30.06	763.4	30.07	763.7	68.9	20.5	89	SW			1	6	0	NE		0	0	½ cloudy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.28	769.0	41.0	5.0	21	E				0	0			0	0		G. Barreda, M. D.
Vera-Cruz	30.07	763.9	30.10	764.6	70.7	21.5	73	NW				2ck	5sk			0	0	Cloudy	Prof. J. Rossell.
Zacatecas	22.67	573.4	30.19	766.9	52	11	72	SSE			1	0	0			0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.29	591.7	30.06	763.5	42.8	6.0	83	NNE	0.9	0.4		0	0			0	0	Clear	Prof. P. Spina.
Durango																			M. V. de Leon, C. E.
Colima	28.38	720.9	30.02	762.5	76.6	24.8	79	NE			1	0	1			0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.92	759.9	30.07	763.7	69.8	21		Calm			0	10ks	0			0	0	Covered	Antonio Guerra y Guerra.

Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,406 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.25	742.9	29.25	742.9	50.0	10.0		SSW			4					0.150	3.8		
Groningen	29.15	740.5	29.21	741.9	49.1	9.5		SSW			4					0.508	12.9		
Helder	29.17	741.0	29.17	741.0	52.9	11.6		SW			4					0.173	4.4		
Hellevoetsluis	29.22	742.2	29.22	742.2	49.5	9.7	89	SW			3								
Utrecht	29.19	741.5	29.24	742.7	48.4	9.1	88	SW			4		10			0.039	1.0	Dull	H. v d Bruk.

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	28.54	724.9	28.60	726.3	48.6	9.2	79	S	1.1	0.5	.....	.....	10	.....	.....	0.787	20.0	Raining	
Brönö	29.11	739.3	29.15	740.3	48.2	9.0	48	SE	27	12	.....	.....	2	.....	.....	0	0	.....	
Christiania	28.63	727.1	28.77	730.7	50.5	10.3	88	SSW	18	8	.....	.....	10	.....	.....	1.008	25.6	.....	
Tromsö	29.18	741.2	29.22	742.3	43.5	6.4	86	Calm	0	0	.....	.....	10	.....	.....	0.098	2.5	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.90	759.4	30.09	764.2	68.0	20.0	61	ESE	10.5	4.7	.....	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.99	786.4	30.02	762.4	63.1	17.3	74	SW	7.4	3.3	.....	.....	10	SW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.95	760.6	30.03	762.8	74.5	23.6	61	E	8.1	3.6	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. da Cunha.
Lisbon, Observatory	29.66	753.3	30.02	762.4	62.2	16.8	96	SW	13.7	6.1	.....	.....	9	.....	.....	0.067	1.7	.....	The Staff.
Ponta Delgada, (Azores)	29.97	761.2	30.04	763.0	68.4	20.2	81	SE	12.5	5.6	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m

Naval Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza	.....	.....	.....	A. J. de Mattos, Com'd't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 53′, W. 23° 34′	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.25	743.0	29.67	753.5	67.9	14.4	64	SSE	13	6	.....	.....	7cks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.32	744.8	29.74	755.4	60.2	10.1	73	S	4	2	.....	.....	10	.....	.....	.....	.....	Heavy clouds.	Astronomical Obs.
Dorpat	29.44	747.8	29.69	754.0	45.9	7.7	90	SSE	9	4	.....	.....	10nks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.77	756 2	29.79	756.6	46.0	7.8	83	SSW	18	8	.....	.....	8n	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.35	745.6	29.99	761.8	52.9	11.6	70	SW	4	2	.....	.....	4c	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	30.00	761.9	30.07	763.7	60.4	15.8	66	NW	4	2	.....	.....	1k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	29.99	761.7	30.01	762.2	66.9	19.4	86	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Raining	Lagorio.
Moscow	29.44	747.8	29.99	761.8	48.6	9.2	92	S	13	6	.....	.....	10s	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.80	756.8	30.00	761.9	61.5	16.4	71	E	2	1	.....	.....	9	.....	.....	.....	.....	Raining	Meteorological Obs.
Archangel	29.75	755.7	29.77	756.2	46.6	8.1	98	SE	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.62	726.9	30.02	762.4	63.5	17.5	59	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.32	770.2	30.24	768.1	52.7	11.5	58	ESE	13	6	.....	.....	1s	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.82	757.5	30.30	769.7	45.7	7.6	55	S	7	3	.....	.....	4ck	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	30.07	763.6	30.34	770.7	46.0	7.8	57	SSE	9	4	.....	.....	4	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.46	748.2	30.46	773.7	37.9	3.3	71	SW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.12	765.1	30.36	771.2	45.7	7.6	38	NE	12	5	.....	.....	4ks	.....	.....	.....	.....	.....	
Tashkend	28.73	729.8	30.51	775.0	42.8	6.0	70	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.80	756.8	30.37	771.3	19.9	— 6.7	97	SW	9	4	.....	.....	10	.....	.....	.....	.....	Snowing.....	Meteorological Obs.
Yeniseisk	29.73	755.1	30.04	763.0	19.4	— 7.0	90	SSW	16	7	.....	.....	10	.....	.....	.....	.....	Snowing.....	Marks.
Peking, (China)	29.91	759.7	30.05	763.3	52.3	11.3	96	Calm	0	0	.....	.....	0	.....	.....	.....	.....	Foggy	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.91	759.7	30.00	761.9	28.4	— 2.0	80	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.70	754.4	29.80	757.0	71.6	22	50	WSW	3.8	1.7	.....	.....	2ck	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.75	755.6	29.80	757.0	56.8	13.8	93	NW	5.1	2.28	.....	.....	10	.....	.....	0.343	8.7	Raining.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.87	682.5	.....	.....	53.6	12.0	87	SW	15.6	6.96	.....	.....	9	.....	.....	0.316	8.0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.70	703.7	29.92	759.9	59.0	15.0	75	SW	19.4	8.67	.....	0	9	.....	.....	0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.77	756 2	29.92	759.9	78.5	26.0	44	S	1.7	0.75	.....	.....	.....	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.96	735.5	29.84	757.9	61.5	16.4	73	W	9.3	4.17	.....	.....	4	.....	.....	0.602	15.3	Cloudy.....	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I	30.01	762.2	30.07	763.9	76.3	24.6	72	E	6.3	2.8	.....	.....	10k;ks	.....	E	0	0	Cloudy	Benito Vines, S. J
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.97	761.2	30.07	763.7	65.3	18.5	72	W	5.7	2.5	.....	0	10	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.83	757.6	29.92	759.9	79.2	26.2	89	SW	0	0	.....	2s	1kn	SE	SE	0	0	D. clouds.....	Leonardo de Teleda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.37	746.0	29.41	747.0	43.9	6.6	.....	SW	.....	.....	4	.....	10	.....	.....	0.31	8.	.....	
Umea	29.34	745.1	29.39	746.4	45.3	7.4	89	S	.....	.....	2	.....	10	.....	.....	0.299	7.6	.....	
Hernosand	29.17	740.9	29.22	742.1	45.7	7.6	94	E	.....	.....	6	.....	10	.....	.....	0	0	.....	
Stockholm	29.08	738.5	29.25	743.0	50.0	10.0	78	WSW	.....	.....	4	.....	5	.....	.....	0.051	1.3	.....	
Wisby	29.29	743.9	29.35	745.4	51.4	10.8	81	SW	.....	.....	6	.....	5	.....	.....	0.091	2.3	.....	
Sub-Series.																			
Upsala	29.14	740.1	29.21	742.0	50.5	10.3	79	S	.....	.....	.....	.....	9	.....	SW	0.179	4.54	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.19	716.0	29.58	751.4	65.5	18.6	50	SW	.....	.....	4	.....	10	.....	.....	0.035	0.9	Covered.....	The Observatory.
Zurich	27.96	710.3	29.58	751.4	60.3	15.7	72	NW	.....	.....	2	.....	5	.....	SW	0.843	21.4	Cloudy.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.1 mm.; Thermometer, +7.6 cent.; Relative Humidity, —24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.08	764.0	67.1	19.5	68	NNE	9	4.0	.....	.....	2	.....	NE	0	0	.....	The Observatory.
Valona	.....	.....	30.12	765.1	73.8	23.2	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.96	760.9	76.5	24.7	65	N	.....	.....	1	.....	0	.....	.....	0	0	Blue sky.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation: no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the coöperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.16	766.1	30.23	767.8	48.8	9.3	100	NE	2	0.9	.....	.....	10n	.....	.....	0	0	Foggy	Hon. J. Ferguson.
Brockville, Ontario	30.08	764.0	30.40	772.1	38	3.3	.....	N	1	0.4	.....	0	2s	.....	N	0	0	Clear	W. R. Rigg.
*Chatham, N B	30.16	766.1	30.22	767.6	49	9.4	96	NE	6	2.7	.....	.....	10s	.....	NE	0.17	4.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.09	764.3	30.13	765.3	51	10.6	90	NE	11	4.9	.....	.....	10n	.....	Calm	0.005	0.13	Sprinkling	H. J. Cundall, C. E.
Cornwall, Ontario	30.20	767.1	30.41	772.4	31.2	— 0.4	100	N	.....	.....	1	0	1s	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B	30.08	764.0	30.24	768.1	47.7	8.7	95	W	.....	.....	1	.....	.....	.....	.....	0.11	2.8	Foggy	H. A. Johnson.
Esquimault, B. C	30.43	772.9	30.48	774.2	42.1	5.6	61	NE	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.32	770.1	30.34	770.6	41	5.0	93	E	5	2.2	.....	.....	Fog	.....	Calm	0.41	10.4	Light rain	J. McWilliams.
Fredericton, N. B	30.19	766.1	30.22	767.6	50.5	10.3	88	NE	5	2.2	.....	.....	10s	.....	.....	0	0	Gloomy	Prof. Harrison.
*Fort Garry Manitoba	29.51	749.5	30.38	771.6	26	— 3.3	96	N	1	0.4	.....	5k	2ks	N	N	0	0	Cloudy	James Stewart.
Granton, Ontario	29.13	739.9	30.26	768.6	42	5.6	.....	E	.....	.....	2	2cs	0	W	.....	0	0	Fair	James Grant.
*Halifax, N. S	29.91	759.7	30.04	763.0	51	10.6	92	NE	7	3.1	.....	.....	10n	.....	NE	0.048	1.09	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.96	761.0	30.35	770.0	39.7	4.3	91	W	.....	.....	1	4c	0	.....	.....	0	0	.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.07	763.8	30.09	764.3	48	8.9	100	NE	.....	.....	2	.....	10	.....	.....	0.06	1.5	Raining	E. Weedon.
*Kingston, Ontario	30.07	763.8	30.42	772.7	38	3.3	83	NE	6	2.7	.....	5c	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	5.8	.....	C. H. Rigby.
*Montreal, Quebec	30.29	767.1	30.41	772.4	40	4.4	69	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	C. H. McLeod, C. E
*Parry Sound, Ontario	29.93	760.6	30.34	770.6	42	5.6	79	E	15	6.7	.....	5k	5ks	SW	SW	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.92	760.3	30.30	771.9	39.1	3.9	91	NE	.....	.....	0	6k	.....	.....	.....	0	0	Fine	J. F. Jeffers, B. A.
Port Dover, Ontario	29.59	751.6	30.30	769.6	42	5.6	93	NE	8	3.6	.....	5ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.06	763.5	49.3	9.6	.....	NE	5	2.2	.....	.....	.....	.....	.....	0.25	6.3	Cloudy	Peter Grant.
Port Stanley, Ontario	29.60	751.8	30.26	768.6	45	7.2	75	E	8	3.6	.....	5ck	0	W	.....	0	0	Fair	M. Payne.
*Quebec, Quebec	30.04	763.0	30.37	771.4	40	4.4	87	NE	.....	.....	1	0	0	.....	.....	0.06	1.5	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.97	761.2	30.45	773.4	32	0.0	100	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. Andrews, N. B	30.09	764.3	30.14	765.5	50	10.0	89	NE	6	2.7	.....	.....	5ks	.....	.....	0.19	4.8	Cloudy	Dr. Gove.
St. John, N. B	29.98	761.5	30.14	765.5	50	10.0	93	NE	11	4.9	.....	9cs	0	.....	.....	0.02	0.5	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.56	750.8	30.29	769.4	44	6.7	68	E	14	6.3	.....	.....	10ks	.....	.....	0	0	Threatening	K. Stewart.
Stayner, Ontario	29.52	749.8	30.32	770.1	44	6.7	92	SE	5	2.2	.....	5k	0	W	.....	0	0	Fair	R. J. Cole.
Stratford, Ontario	29.97	735.8	30.29	769.4	38.5	3.6	95	SE	11.0	4.9	.....	2cs	2s	.....	.....	0	0	Fair	C. J. MacGregor, M.
*Sydney, C. B	30.07	763.8	30.11	764.8	49	9.4	95	E	5	2.2	.....	.....	10n	.....	.....	0.05	1.3	Cloudy	T. C. Hill.
*Toronto, Ontario	29.97	761.2	30.37	771.4	44	6.7	91	E	7	3.1	.....	5k	2ks	W	SE	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From —	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From —	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.12	765.0	30.35	770.9	38	3.3	81	NW	10	4.5		0	0			0	0	Clear	
Alpena, Michigan	29.62	762.3	30.28	769.1	41	5.0	100	E	4	1.8			10n		Calm	0.08	2 0	Light rain	
Atlanta, Georgia	29.13	739.9	30.29	769.4	53	11.7	60	S	4	1.8		0	Sm'e		Calm	0	0	Smoky	
Atlantic City, New Jersey	30.27	768.8	30.28	769.1	46	7.8	69	N	6	2.7		0	0			0	0	Clear	
Augusta, Georgia	30.14	765.5	30.33	770.4	49	9.4	93	NW	3	1.3		Haze	Sm'e			0	0	Smoky	
Baltimore, Maryland	30.29	769.4	30.34	770.6	50	10.0	65	E	3	1.3		Haze	0		Calm	0	0	Hazy	
Barnegat, New Jersey	30.26	768.6	30.26	769.1	46	7.8	69	NW	18	8.0		0	0			0	0	Clear	
Bismarck, Dakota	28.50	723.9	30.36	771.1	22	5.6	72	NW	4	1.8			10s		NW	0.18	4 6	Cloudy	
Boerne, Texas	28.60	726.4			65	18.3	84	S	6	2.7		0	0			0	0	Clear	
Boise City, Idaho	27.41	696.2	30.37	771.4	28	— 2.2	77	S	2	0.9		5ck	0	W		0	0	Fair	
Boston, Massachusetts	30.10	764.5	30.25	768.3	49	9.4	64	NW	12	5.4		5ck	2s	NE	NE	0	0	Fair	
Brackettville, Texas	28.88	733.5	29.90	759.4	59	15.0	58	E	4	1.8		0	0			0	0	Clear	
Breckenridge, Minnesota	29.30	744.2	30.37	771.4	25	— 3.9	87	NW	12	5.4			10ks		W	0.04	1.0	Cloudy	
Brownsville, Texas	29.97	761.2	30.04	763.0	74	23.3	68	S	4	1.8		0	8ks		S	0	0	Fair	
Buffalo, New York	29.60	751.8	30.33	770.4	40	4.4	82	NE	10	4.5		1ck	0	W		0	0	Clear	
Burkes, Arizona					57	13.9	10	S			0	5c	0	E		0	0	Fair	
Burlington, Vermont	30.16	766.1	30.43	772.9	40	4.4	73	N	4	1.8		0	0			0	0	Clear	
Cairo, Illinois	29.71	754.6	30.10	764.5	56	13.3	75	S	8	3.6		2c	0	SW		0	0	Fair	
Camp Apache, Arizona	24.56	623.8	29.56	750.8	38	3.3	54	NE			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	50	10.0	32	Calm			0	0	0			0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.25	768.3	36	2.2	45	N			1	0	0			0	0	Clear	
Campo, California	27.37	695.2	29.94	760.5	32	0 0	69	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	61	16.1	71	N	12	5.4		0	0			0	0	Clear	
Cape Henry, Virginia	30.27	768.8	30.30	769.6	56	13.8	67	NW	20	8.9		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.26	768.6	30.28	769.1	56	13.3	75	NE	11	4.9		0	0			0	0	Clear	
Cape May, New Jersey	30.27	768.8	30.30	769.6	47	8.3	69	N	18	8.0		0	0			0	0	Clear	
Castroville, Texas	29.26	743.7	29.99	761.7	56	13.3	87	Calm	0	0			Fog			0	0	Foggy	
Charleston, South Carolina	30.28	769.1	30.35	770.9	57	13.9	75	N	5	2.2		0	0			0	0	Clear	
Cheyenne, Wyoming	24.23	615.4	30.17	766.3	13	—10.6	81	N	12	5.4		0	8s		N	Inap.	Inap.	Cloudy	
Chicago, Illinois	29.37	746.0	30.06	763.5	52	11.1	73	NE	6	2.7		5k	0	W		0.06	1.5	Fair	
Cincinnati Ohio	29.57	751.1	30.23	767.8	50	10.0	79	SE			1	0	Fog		Calm	0	0	Clear	
Cleveland, Ohio	29.48	748.8	30.22	767.6	45	7.2	76	SE	12	5.4		0	Fog		Calm	0	0	Clear	
Coleman City, Texas	28.31	719.1	30.01	762 2	48	8.9	56	N	13	5.8		8c	0	Calm		0	0	Fair	
Columbus, Ohio	29.35	745.5	30.21	767 3	44	6.7	75	SE	3	1.3			Fog		Calm	0	0	Foggy	
Concho, Texas	28.16	715.3	29.85	758.2	50	10.0	59	NE	12	5.4		10c	0	NE		0	0	Cloudy	
Corsicana, Texas	29.64	752.8	30.11	764.8	60	15.6	82	S	3	1.3		0	5s		Calm	0	0	Fair	
Davenport, Iowa	29.54	750.3	30.20	767.1	40	4.4	82	N	8	3.6			10s		Calm	0	0	Cloudy	
Decatur, Texas	28.91	735 1	30.12	765.0	52	11.1	54	N	6	2.7			10s		S	0	0	Cloudy	
Denison, Texas	29.25	742.9	30.04	763.0	61	16.1	82	NW	4	1.8			10s		W	0	0	Cloudy	
Denver, Colorado	25.05	636.3	30.27	768.8	20	— 6.7	70	N	5	2.2			10n		Calm	0.25	6.3	Light snow	
Des Moines, Iowa	29.35	745.5	30.28	769.1	33	0.6	79	N	2	0.9		0	Sm'e		Calm	0	0	Smoky	
Detroit, Michigan	29.46	748.3	30.14	765.5	49	9.4	78	E	9	4.0		2k	2s	W	W	0	0	Fair	
Dodge City, Kansas	27.88	703.1	30.11	764.8	30	— 1.1	78	N	20	8.9		5ck	5ks	W	W	0	0	Cloudy	
Dubuque, Iowa	29.51	749.5	30.24	768.1	40	4.4	82	N	1	0.4		5k	Fog	N	Calm	0.03	0.8	Cloudy	
Duluth, Minnesota	29.58	751.3	30.28	769.1	37	2.8	71	NE	5	2.2			10s		NE	0	0	Cloudy	
Eagle Pass, Texas	29.24	742.7	29.97	761.2	59	15.0	88	E	5	2.2		0	0			0	0	Clear	
Eastport, Maine	30.09	764.3	30.16	766.1	50	10.0	93	N	12	5.4			10s		N	0.36	9.1	Cloudy	
Edinburg, Texas					71	21.7	85	Calm			0	0	0			0	0	Clear	
El Paso, Texas					60	15.6	28	Calm	0	0		0	5s		Calm	0	0	Fair	
Erie, Pennsylvania	29.54	750.3	30.26	768.6	48	8.9	63	SE	12	5.4		5ck	0	W		0	0	Fair	
Escanaba, Michigan	29.59	751.6	30.27	768.8	37	2.8	90	N	16	7.2			10n		N	0.04	1.0	Light rain	
Florence, Arizona	28.40	721.3	30.00	762.0	52	11.1	35	W			1	5c	0	SW		0	0	Fair	
Fort Craig, New Mexico	25.54	648.7	29.61	752.1	40	4.4	47	Calm	0	0		5cs	0	Calm		0	0	Fair	
Fort Davis, Texas	25.24	641.1	30.20	767.1	51	10.6	27	Calm	0	0		2c	0	SW		0	0	Fair	
Fort Gibson, Indian Ter	29.57	751.1	30.11	764.8	50	10.0	72	NW	5	2.2		5c	Sm'e	Calm	NW	0	0	Smoky	
Fort Griffin, Texas	28.86	733.0	30.16	766.1	47	8.3	48	N	8	3.6		5c	2s	N	Calm	0	0	Fair	
Fort McKavett, Texas	27.85	707.4	29.75	755.6	60	15.6	77	E	2	0.9			8ks		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.91	734.3	30.05	763.3	45	7.2	60	NW	20	8.9		5c	0	NW		0	0	Fair	
Fredericksburg, Texas	28.31	719.1	29.86	758.2	65	18.3	73	S	5	2.2		0	0			0	0	Clear	
Galveston, Texas	30.08	764.0	30.12	765.0	74	23.3	63	S	8	3.6			10ks		S	0	0	Cloudy	
Graham, Texas	29.03	737.3	30.12	765.0	46	7.8	62	N	6	2.7		5cs	Sm'e	SW		0	0	Smoky	
Grand Haven, Michigan	29.47	748.5	30.13	765.3	44	6.7	84	E	9	4.0			10s		Calm	0.34	8.6	Cloudy	
Indianapolis, Indiana	29.34	745.2	30.11	764.8	52	11.1	66	SE	7	3.1		2cs	Sm'e	Calm	Calm	0	0	Clear	
Indianola, Texas	30.07	763.8	30.10	764.5	73	22.8	67	S	7	3.1			10s		S	0	0	Cloudy	
Jacksboro, Texas	28.94	735.1	30.09	764.3	45	7.2	61	N	1	0.4		5c	0	Calm		0	0	Fair	
Jacksonville, Florida	30.24	768.1	30.26	768.6	62	16.7	83	N	2	0.9		8k	0	E		0	0	Cloudy	
Keokuk, Iowa	29.51	749.5	30.14	765.5	44	6.7	76	NE	8	3.6			10s		W	0.01	0.3	Cloudy	
Key West, Florida	30.08	764.0	30.11	764.8	74	23.3	72	NE	15	6.7			10s		NE	0	0	Cloudy	
Kittyhawk, North Carolina	30.26	768.6	30.28	769.1	61	16.1	66	NE	29	13.0		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.32	744.7	30.36	771.1	43	6.1	88	Calm	0	0		0	Fg;mu		NE	0	0	Clear	
La Crosse, Wisconsin	29.48	748.8	30.24	768.1	38	3.3	73	N	4	1.8			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	42	5.6	42	Calm	0	0		5cs	0	Calm		0	0	Fair	
Laredo, Texas	29.59	751.6	29.93	760.2	61	16.1	88	E	4	1.8		0	0			0	0	Clear	
Lead City, Dakota	25.09	637.3	30.36	771.1	13	—10.6	81	NW	3	1.3			10s		NW	0.10	2.5	Cloudy	
Leavenworth, Kansas	29.37	746.0	30.24	768.1	38	3.3	72	N	12	5.4		0	0			0	0	Clear	
Los Angeles, California	29.56	750.8	29.90	759.4	51	10.6	79	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.62	752.3	30.18	766.6	52	11.1	66	SE	5	2.2		0	Sm'e		Calm	0	0	Smoky	
Lynchburg, Virginia	29.65	753.1	30.35	770.9	46	7.8	77	Calm	0	0		0	0			0	0	Clear	
Madison, Wisconsin	29.19	741.4	30.21	767.3	40	4.4	91	N	5	2.2			10s		N	0.03	0.8	Cloudy	
Marquette, Michigan	29.56	750.8	30.28	769.1	38	3.3	91	NW	5	2.2			10s		Calm	0.02	0.5	Cloudy	
Mason, Texas	28.42	721.9	30.15	765.8	59	15.0	82	Calm	0	0		0	2s		S	0	0	Fair	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.41	747.0	30.15	765.8	45	7.2	84	NE	8	3.6			10s		NE	0.05	1.3	Cloudy	
Mobile, Alabama	30.23	767.8	30.27	768.8	52	11.1	86	S	7	3.1		0	0			0	0	Clear	
Montgomery, Alabama	30.08	764.0	30.32	770.1	49	9.4	77	E	2	0.9		0	0			0	0	Clear	
Morgantown, West Virginia	29.22	742.2	30.31	769.9	40	4.4	82	Calm	0	0			Fog		Calm	0	0	Foggy	
Mt. Washington, N. H.	23.97	608.8	30.33	770.4	30	—1.1	78	NW	4	1.8		0	5ks		NW	0	0	Clear	
Nashville, Tennessee	29.72	754.9	30.27	768.8	47	8.3	85	E	1	0.4		0	Sm'e		Calm	0	0	Smoky	
New Haven, Connecticut	30.16	766.1	30.28	769.1	47	8.3	62	N	8	3.6		0	0			0	0	Clear	
New London, Connecticut	30.22	767.6	30.27	768.8	50	10.0	65	N	8	3.6		0	1s		Calm	0	0	Clear	
New Orleans, Louisiana	30.17	766.3	30.23	767.8	63	17.2	78	E	4	1.8		0	9ks		SE	0	0	Cloudy	
Newport, Rhode Island	30.18	766.6	30.24	768.1	52	11.1	60	N	15	6.7		5k	0	N		0	0	Fair	
New York, New York	30.12	765.0	30.30	769.6	48	8.9	63	NW	16	7.2		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	30.25	768.3	30.31	769.9	56	13.3	75	N	4	1.8		0	Haze			0	0	Clear	
North Platte, Nebraska	27.46	697.5	30.24	768.1	23	— 5.0	80	N	20	8.9		5k	5s	N	N	0	0	Cloudy	
Olympia, Washington Ter.	30.41	772.4	30.45	773.4	30	— 1.1	100	S	2	0.9		0	Fog		Calm	0	0	Clear	
Omaha, Nebraska	29.13	739.9	30.28	769.1	35	1.7	80	N	6	2.7		0	2s		Calm	0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	CLOUDS. Amount. Up'er 0—10	Low'r 0—10.	Direction. Upper. From—	Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	30.09	764.3	30.42	772.7	46	7.8	69	SE	4	1.8	.....	2c	0	NW	.....	0	0	Fair	
Pembina, Dakota	29.50	749.3	30.38	771.6	23	— 5.0	86	NW	1	0.4	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Philadelphia, Pa	30.29	769.4	30.34	770.6	46	7.8	62	N	15	6.7	.....	0	Haze	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.76	730.5	.....	.....	60	15.6	39	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.61	447.1	29.82	757.4	1	—17.2	71	SW	12	5.4	.....	5cs	0	SW	.....	0.01	0.3	Fair	
Pioche, Nevada	24.05	610.9	29.82	757.4	27	— 2.8	64	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.47	748.5	30.31	769.9	41	5.0	91	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.50	749.3	30.18	766.6	46	7.8	77	SE	8	3.6	.....	8ck	2ks	W	Calm	0	0	Cloudy	
Portland, Maine	30.17	766.3	30.22	767.6	50	10.0	72	NW	15	6.7	.....	5k	0	N	.....	0.16	4.1	Fair	
Portland, Oregon	30.39	771.9	30.50	774.7	38.0	3.3	95	NW	8	3.6	.....	0	8s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.77	629.2	30.13	765.3	35	1.7	53	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.47	748.5	30.30	769.6	63	17.2	71	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.16	766.1	30.18	766.6	67	19.4	79	N	11	4.9	.....	2ck	0	NE	.....	0	0	Clear	
Red Bluff, California	29.67	753.6	30.03	762.7	59	15.0	18	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.86	758.4	30.08	764.0	62	16.7	88	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.76	755.9	30.40	772.1	41	5.0	91	SE	3	1.3	.....	5ck	Fog	W	Calm	0	0	Fair	
Roseburg, Oregon	29.79	756.7	30.40	772.1	30.5	— 0.8	89	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.88	758.9	29.96	761.0	55	12.8	40	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.52	749.8	30.11	764.8	48	8.9	78	N	12	5.4	.....	.....	10s	.....	.....	0	0	Cloudy	
St. Marks, Florida	30.26	768.6	30.28	769.1	49	9.4	93	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.35	745.5	30.22	767.6	35	1.7	70	E	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Salt Lake City, Utah	25.75	654.0	30.08	764.0	25.5	— 3.6	69	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.39	746.5	29.98	761.5	60	15.6	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.86	758.4	29.94	760.5	58	14.4	94	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.50	749.3	30.18	766.6	49	9.4	78	S	12	5.4	.....	0	Sm'e	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.26	768.6	30.30	769.6	48	8.9	70	N	26	11.6	.....	0	Sm'e	.....	Calm	0	0	Clear	
San Francisco, California	29.89	759.2	29.96	761.0	58	14.4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	42	5.6	19	E	10	4.5	.....	1c	0	Calm	.....	0	0	Clear	
Savannah, Georgia	30.23	767.8	30.32	770.1	55	12.8	81	N	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.95	760.7	30.17	766.3	62	16.7	83	S	4	1.8	.....	5cs	0	S	.....	0	0	Fair	
Silver City, New Mexico	24.31	617.5	.....	.....	40	4.4	40	W	2	0.9	.....	0	2s	.....	Calm	0	0	Fair	
Smithville, North Carolina	30.29	769.4	30.33	770.4	53	11.7	80	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.15	765.8	30.28	769.1	48	8.9	56	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.09	688.1	30.09	764.3	45	7.2	60	NW	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
Thatcher's Island, Mass	30.21	767.3	30.26	768.6	50	10.0	79	NW	16	7.2	.....	1cs	0	N	.....	0	0	Clear	
Toledo, Ohio	29.45	748.0	30.18	766.8	50	10.0	72	E	3	1.3	.....	0	5ks	.....	NW	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	59	15.0	32	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.28	769.1	30.31	769.9	62	16.7	82	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	30.15	765.8	.....	.....	39.0	3.9	64	W	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	39	3.9	100	SE	.....	.....	1	.....	10n	.....	S	0	0	Cloudy	
Uvalde, Texas	29.15	740.4	29.97	761.2	59	15.0	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	30.01	762.2	30.28	769.1	56	13.3	87	SE	8	3.6	.....	5k	0	SW	.....	0	0	Fair	
Virginia City, Montana	24.44	620.8	29.92	760.0	15	— 9.4	65	E	16	7.2	.....	0	0	.....	.....	0.05	1.3	Clear	
Visalia, California	29.62	752.3	29.99	761.7	45	7.2	85	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.25	768.3	30.37	771.4	44	6.7	84	N	5	2.2	.....	0	Fog	.....	N	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	40	4.4	48	NW	.....	.....	1	2c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.22	767.6	30.30	769.6	50	10.0	86	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.79	655.0	30.15	765.8	12	—11.1	61	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.16	766.1	30.22	767.6	53	11.7	66	NW	10	4.5	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Yankton, Dakota	29.04	737.6	30.40	772.1	33	0.6	84	NW	14	6.3	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.69	754.1	29.86	758.4	57	13.9	53	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	8.0	—13.3	89	W	15	6.7	.....	4k	2s	NW	W	0.07	1.8	Cloudy	J. Fortescue, W. Wood.
York Factory, B. A.	29.86	758.4	29.91	759.7	77	25.0	91	SE	2.4	1.1	.....	0	8ks	.....	SE	0	0	Cloudy	Chas. Hasselbrink.
Havana, Cuba, W. I.	30.04	763.0	30.06	763.5	78	25.6	82	N	.....	.....	1	8ck?	4s?	SE	NE	.....	.....	.....	Robert Mason.
Santiago de Cuba, W. I.	29.88	758.9	29.91	759.7	86	30.0	76	E	3	1.3	.....	2c	2ks	SE	.....	0.13	3.3	Clear	G. O. Gellich.
St. Thomas, W. I.	.....	.....	.....	.....	81	27.2	91	Calm	0	0	.....	5c	5ks	Calm	E	0.05	1.3	.....	James Gall.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	80	26.7	.....	NE	15	6.7	.....	.....	.....	.....	.....	0.96	24.4	Raining	F. M. Everett.
Navassa, W. I.	29.83	757.7	29.91	759.7	80	26.7	96	E	.....	.....	1	.....	8cs	.....	.....	2.920	73.45	Cloudy	C. J. Hering
Paramaribo, D. Guiana, S. A.	29.92	760.0	29.92	760.0	65.0	18.3	87	Calm	0	0	.....	3cs	5ks	.....	.....	0.98	24.9	.....	Thomas Herran.
Medellin, Colombia, S. A.	25.21	640.3	.....	.....	79	26.1	95	W	.....	.....	.....	.....	n	.....	.....	.....	.....	Squally	Robert Elworthy.
Portland, Jamaica, W. I.	29.73	755.1	30.04	763.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,152 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ? m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 ?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,110.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.67 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.35	770.9	60	15.6	60	15.6	82	NE	6	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H.	30.16‡	766.1‡	.....	.....	49	9.4	71	NW	2	0.9	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	30.07*	763.8*	61.5	16.4	56.2	13.4	81	NNE	.....	.....	3	.....	3k	....	NW	0	0	.....	.....	Fair.....	
Adams. Valparaiso, Chili.....	30.15	765.8	63	17.2	57	13.9	81	SSE	.....	.....	1	.....	2	.....	S	.....	.....	Smooth	.....	Fair	
Alaska. S. 11° 41′, W. 77° 43′.....	30.12	765.0	67	19.4	61	16.1	88	SSE	.....	.....	1	.....	10	.....	.....	0	0	Smooth	.....	Misty.....	
Alliance, Smyrna, Turkey.....	29.99‡	761.7‡	.....	.....	72	22.2	67	W	.....	.....	2-3	.....	7	.....	Calm	.....	.....	Light	W	Pleasant.....	
Ashuelot. Nagasaki, Japan.....	30.04	763.0	67	19.4	66	18.9	68	NE	.....	.....	4	.....	8	.....	NE	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.17	766.3	48	8.9	64	17.8	78	NE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado. New York, N. Y.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Constitution, Havre, France.....	.....	.....	.....	.....	53	11.7	100	SW	.....	.....	4	.....	8	.....	SW	.....	.....	.....	.....	Cloudy	
Despatch. Constantinople, Turkey	30.13‡	765.3‡	.....	.....	72	22.2	71	NE	.....	.....	2	.....	2	.....	NE	.....	.....	.....	.....	Clear.....	
Essex, Cape Town.....	29.96	761.0	63	17.2	63	17.2	94	NW	.....	.....	6	.....	10	.....	NW	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.39	771.9	72	22.2	58	14.4	82	N	6	2.7	.....	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Gettysburg Jaffa, Syria.....	29.91‡	759.7‡	.....	.....	79	26.1	82	NNW	.....	.....	3	.....	2	.....	.....	0	0	Smooth	W	D. clouds....	
Guard. N. 13° 34′, W. 46° 31′.....	29.96	761.0	85	29.4	85	29.4	91	ESE	.....	.....	4	....	5	.....	SE	.....	.....	Mod'ate	SE	Fair	
Hartford, St. Catherine Strait.....	29.96	761.0	75	23.9	75	23.9	77	NE	8.4	3.8	.....	.. ..	2	.....	NE	0	0	Smooth	.....	Clear.....	
Marion, N. 40° 35′, E. 18° 26′.....	30.05	763.3	72	22.2	72	22.2	71	ESE	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Michigan, Erie, Pa.....	30.11†	764.8†	.....	.....	47	8.3	62	SE	.....	.....	5	.....	5	.....	SW	.....	.....	.....	.....	Clear.....	
Monocacy. Yokohama, Japan	30.13‡	765.3‡	.....	.....	58	14.4	76	N	.....	.....	2-3	.....	5	.....	N	.....	.....	.....	.....	Fair	
New Hampshire. Port Royal, S. C.....	30.37	771.4	63	17.2	64	17.8	68	N	10	4.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	64	17.8	83	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.08	764.0	60	15.6	54	12.2	87	W	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	50	10.0	79	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Santa Cruz, W. I.....	30.08	764.0	83	28.3	83	28.3	87	E	.....	.....	2	.....	10	.....	ESE	.....	.....	.....	.....	Bright.....	
Powhatan, New York, N. Y..... ...	30.33‡	770.4‡	.....	.....	50	10.0	64	N	12.6	5.6	.....	.....	.....	.....	.....	0	0	.....	.....	Clear.....	
Quinnebaug, Norfolk, Va...	30.32‡	770.1‡	.....	.....	54	12.2	93	N	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Ranger, Hong-Kong, China	30.06	763.5	80	26.7	78	25 6	86	ESE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas.....	30.05	763.3	72	22.2	71	21.7	95	NNE	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Santee, Annapolis, Md	30.31‡	769.9‡	.....	.....	53	11.7	54	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
Saratoga, Philadelphia, Pa.....	30.22	767.6	.....	.....	46	7.8	69	NNW	.....	.....	4	.....	0	.....	.....	0	0	.....	.....	Misty.....	
St. Louis, League Island, Pa	30.22	767.6	60	15.6	49	9.4	71	N	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France.....	29.37	746.0	58	14.4	55	12.8	87	WSW	.....	.....	6	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Trenton, Villafranca, France.....	29.74‡	755.4‡	.....	.....	64	17.8	89	WNW	.....	.....	2	.....	10	.....	S; W	4.0	102.	.....	.....	Overcast.....	
Vandalia, Villafranca, France	29.84‡	757.9‡	.....	.....	65	18.3	84	WNW	.....	.....	1	.....	10	.....	NW	.....	.....	.....	.....	Raining.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	49	9.4	71	NNW	10	4.5	.....	.....	5	.....	.....	0	0	.....	.....	Clear.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Anerold Barometer. ‡Reduced to sea-level: corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	Up'er 0–10.	Low'r 0–10.	Upper. From—	Lower. From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 30° 52′, E. 129° 24′		29.98*	761.6*	74	23.3	100	N			3		10		N				Misty	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 32° 6′, W. 117° 49′		29.94*	760.5*	62	16.7	??	NW			2		2		Calm	0	Very Small	WNW	Misty	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Olympia, W. T.		30.44*	773.2*	44	6.7	76	Calm			0		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 49° 37′, W. 29° 50′		30.05†	763.3†	55	12.8		WNW			4		2c		NW	0	Moderate; high	N	Fair	Capt. W. H. Thompson.
S. S. Celtic, N. 40° 27′, W. 69° 32′		29.97*	761.2*	58	14.4	94	NNE			6		10		NW	0	Light	N	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 37° 14′, W. 125° 21′		29.86	758.4	60	15.6	76	NNW			5		k		NNE	0	Rough; cross		Misty	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 48° 14′, W. 34° 49′		30.07	763.8	65.0	18.3	60	ENE			2		2		E	0	4	NE	Bright	Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S.S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 39° 20′, W. 70° 16′		30.15*	765.8*	56	13.3	87	NNE			7		10		NNE	0	Light	NE	Cloudy	Captain Sargent.
S. S. Ohio, N. 51° 24′, W. 13° 41′		29.35	745.5	52	11.1	86	W			6		10		W		Small	W	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 43° 00′ W. 59° 16′		29.88*	758.9*				NE	25	11.2			10		NE		Mod'ate	NE	Misty	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 11° 00′, W. 68° 00′		29.84	757.9	88	31.1	75	WSW	3	1.3			2s		Calm	0.07 in. or 1.8 mm.	Swell	NE	Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^{d}.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 26, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:38 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			29.03	760.1	72.1	22.3	84	NW			1		3			0	0	Pretty fair.	Kesxuche.
Algiers			29.86	758.4	73.8	23.2	51	NW			3		0			0	0	Clear	Tourilliere.
La Calle			29.90	759.5	79.6	26.4	67	ESE			1		4			0	0	Cloudy	Foufrede.
Tunis			29.95	760.6	84.6	29.2	46	WSW			1		4			0	0	Cloudy	Jacques.
Sfax			30.08	764.0	78.8	26.0		NNE			3		4			0	0	Cloudy	Gau.
Saida			29.90	760.9	75.2	24.0	33	W			6		2			0	0	Fair	Herbin.
Tebessa			29.93	760.3	77.9	25.5	36	W			5		3			0	0	Pretty fair.	Watrin.
Geriville			29.95	760.8	68.0	20.0	53	S			3		2			0	0	Fair	Brugniaux.
Laghouat			29.99	761.8	74.1	23.4	17	NNE			1		0			0	0	Clear	Bertrand.
Biskra			30.03	762.7	83.1	28.4	43	WNW			1		0			0	0	Clear	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m., or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.16	740.7	29.69	754.0	72.1	22.3	49	SW			4		5			0.016	0.4	Raining	Prof. Ivan Stossir.
Cracow, I. R. Observatory	28.98	736.2	29.75	755.6	61.8	11.0	85	W			2		10			0.067	1.7		Dr. Wierzbiski
Eperies	28.89	733.9	29.76	756.0	55.4	13.0	86	S			3		10s		N	0	.0		Julius Mikolik.
Gratz	28.56	725.4	29.80	757.0	53.2	11.8	82	SE			2		10			0.055	1.40		Andreas Rospint.
Hermannstadt	28.39	721.2	29.84	757.8	64.9	18.3	46	S			4		3			0	0		Prof. A. Gottschling.
Kremsmünster	28.37	720.5	29.69	754.2	53.4	11.9	66	E			2		2			0.425	10.8		Prof. C. Wagner.
Lemberg	28.76	730.2	29.72	754.8	57.4	14.1	75	S			2		6			0.012	0.3		Dr. T. Stanecki.
Pola	29.65	753.1	29.76	755.0	69.8	21.0	77	SSE			3		10s			0	0		I.R.Hydrographic Office
Szathmar	29.38	746.2	29.83	757.7	64.8	18.2	62	SE			3		9			0.059	1.5		Julius Csics, S. J.
Szegedin	29.50	749.3	29.77	756.2	50.4	10.2	58	S			3		5			0	0		Karl Stancel.
Trieste	29.69	754.0	29.79	756.6	70.2	21.2	79	SW			1		6			0	0	Almost clear	P. Busin.
Vienna	29.07	738.3	29.78	756.4	54.9	12.7	63	W			2		6			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																0.476	12.1		Prof. M. Passau.
Brussels	29.04	737.5	29.23	742.5	50.4	10.2	90	SSE			6		10		SSW	0.346	8.80	Light rain	Royal Observatory
Furnes	29.12	739.7	29.16	740.3	47.1	8.4	93	SSW			7		8			0.165	4.2	Raining	M. E. de Cae
Maeseyck	29.19	741.5	29.32	744.8	53.2	11.8	76	S			4		10			0.063	1.6		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

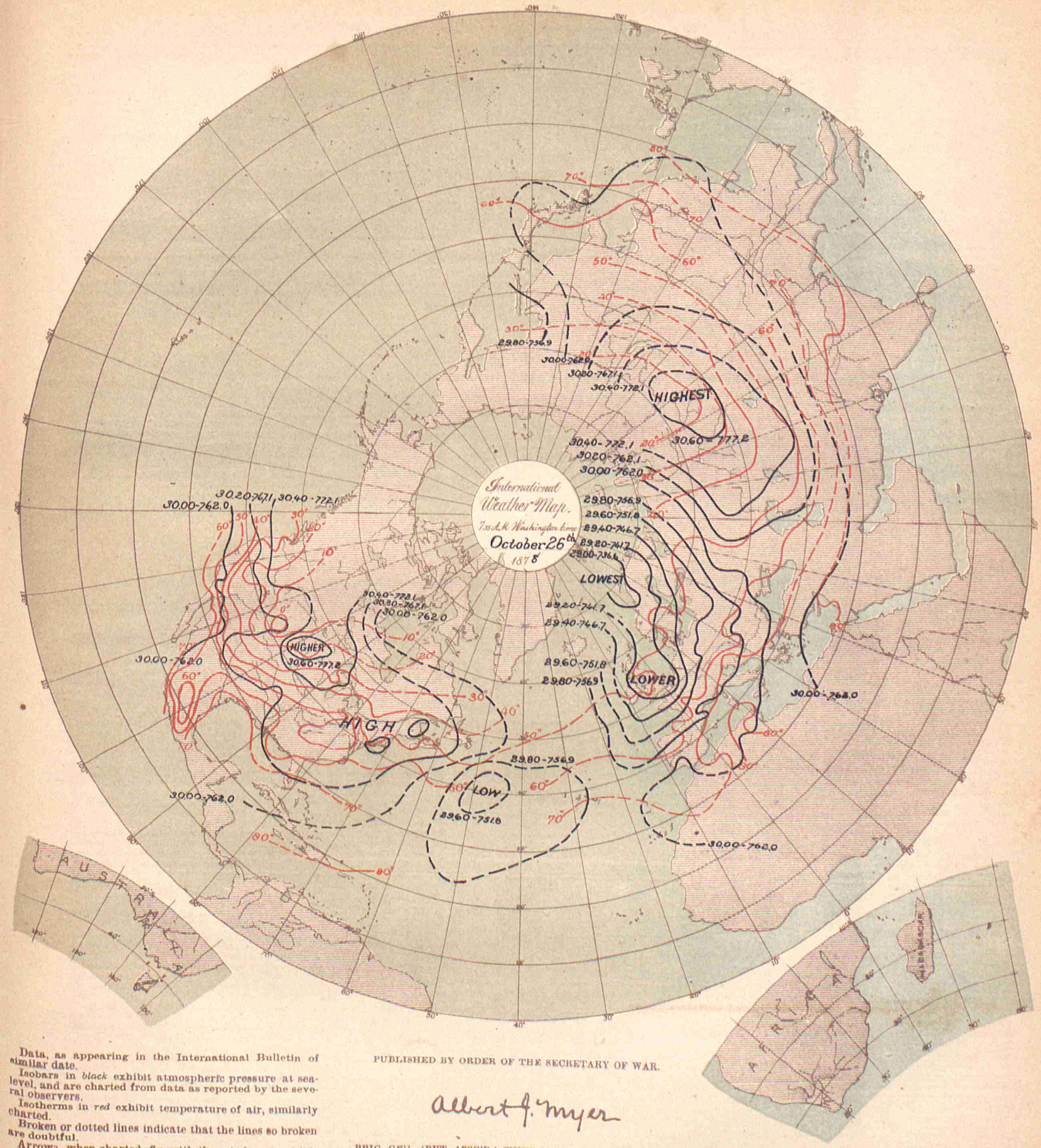
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum't'al error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Clouds. Amount. Low'r. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Aberdeen	29.08	738.6	29.18	741.2	46.7	8.2		NW	11	4.9			6			0.180	4.57	D. clouds	W. Boswell.
Ardrossan	29.12	739.6	29.14	740.1	48	8.9		NE			2		8					Blue sky	George Carrick.
Armagh, Observatory			29.14	740.1	47.0	8.3		NNE	7	3.1			9					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.08	738.6	49.0	9.4		N	7	3.1			4					D. clouds	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	28.69	728.7	29.08	738.6	45.1	7.3		N			2		4			0.11	2.8	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.82	757.4	29.85	758.2	80.0	26.7		NE			2		8					Overcast	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.01	736.8	50.0	10.0		SW			1		7					D. clouds	H. Todd.
Cardington			29.10	739.1	50.0	10.0		NW			1		8					Overcast	John McLaren.
Chatham, School M. E.	28.91	734.3	29.04	737.6	55.2	12.9		W			2		8			Blank	Blank	D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	27.75	704.8	29.20	741.7	45.0	7.2		W			3		4					Showery	Alexander Watt.
Donaghadee	29.10	739.1	29.13	739.9	48	8.9		NNE			3		5					D. clouds	J. Mac Gowan.
Dover	29.05	737.9	29.07	738.4	52	11.1		WSW			5		8					Overcast	J. Costello.
Falmouth, Observatory	29.03	737.3	29.26	743.2	51.8	11.0		NW			4		4					D. clouds	The Staff.
Fort Napier, (Natal)	27.43	696.7	29.75	755.6	92.4	33.6		E			3		0					Blue sky	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.68	753.9	29.91	759.7	82	27.8		E			1		4					D. clouds	
Galway, Queen's College			29.21	741.9	49	9.4		NW			2		9					Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.92	760.0	29.97	761.2				N			1		2					Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	28.96	735.6	29.16	740.7	47.1	8.4		N			2		2					Blue sky	D. G. Maclean.
Great Yarmouth	29.01	736.8	29.02	737.1	52	11.1		SW			2		8					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	28.87	733.3	29.03	737.3	52.5	11.4		WSW			1		7					Thunder	The Staff, for G. B. Airy.
Guernsey	28.99	736.3	29.21	741.9	52.5	11.4		WNW			6		5					Squally	Dr. S. E. Hoskins, F.R.S.
Helston			29.30	744.2	54	12.2		NW			4		ck			0.54	13.7	Showery	M. P. Moyle.
Holyhead	29.08	738.6	29.14	740.1	47	8.3		W			2		8			Blank	Blank	D. clouds	John Tilston.
Jerse	28.94	735.1	29.22	742.2	53.7	12.1		W			8		7			Blank	Blank	Squally	J. Fisher.
Kew, Observatory	29.00	736.6	29.04	737.6	52.5	11.4		W	13	5.8			9					Threatening	The Staff.
Kingstown	29.10	739.1	29.13	739.9	48	8.9		WNW			4		9					Overcast	George Mitchell.
Leicester, Museum			29.04	737.6	44.2	6.8		W			1		10					Raining	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.94	760.5	30.10	764.5	77	25.0		SW			1		4k					D. clouds	Sergt. Beckett.
Nairn	29.10	739.1	29.20	741.7	47	8.3		Calm			0		10					Overcast	W. D. Penny.
Nassau, (Bahamas)			30.08	764.0	77.5	25.3		NE			4		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	28.90	734.0	29.10	739.1	44.7	7.1		NNW			2		10n;d		NNW	0.478	12.14	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	28.55	725.2	29.07	738.4	45.0	7.2		NNW			1–2		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.05	737.9	49	9.4		W			3		10						H.E. Bellamy.
Plymouth	29.13	739.9	29.20	741.7	49.9	9.9		NW			4		2					D. clouds	John Merrifield.
Roche's Point	29.20	741.7	29.24	742.7	50	10.0		NW			5		8					Cloudy	W. Kennedy.
Saint Ann's Head	29.00	736.6	29.16	740.7	50	10.0		NW			3		3					Showery	John C. Walker.
Sandwick Manse, (Orkneys.)			29.22	742.2	47.8	8.8		NW	9	4.0			2					D. clouds	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.00	762.0	69.8	21.0		SW			1		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	28.84	732.5	29.11	739.4	46.0	7.8		NNE			2		10			0.48	12.2	Overcast	W. F. Cooper.
Silloth, Rectory	29.09	738.9	29.12	739.6	50.8	10.4	77	NW			2		6			0	0	D. clouds	C. Edith Redford.
Stonyhurst, Observatory	28.70	729.0	29.10	739.1	47.0	8.3		NE			0		8			Blank	Blank	D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	28.83	732.3	29.04	737.6	52.7	11.5		S			1		0?					Raining	Rev. C. H. Griffith, F.M.S.
Thurso	29.15	740.4	29.21	741.9	48	8.9		WNW			2		9					Overcast	John Trotter.
Truro, Royal Institution			29.28	743.7	55	12.8		W			7		5					D. clouds	W. Newcombe.
Valencia, Observatory	29.29	744.0	29.31	744.5	51.9	11.1		NW	15	6.7			6			Blank	Blank	D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			30.12	765.0	42.0	5.6	87	SE			3		0			0.03	0.8		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	78.1	25.6	58	E	16.5	7.4		0	4		ESE	0	0	Squally	C. Meldrum.
Melbourne, Observatory	30.12	765.0	30.21	767.3	48.0	8.9	78	SE	5	2.2			2			0.06	1.5	Fine	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Bar. Corrected. Inches.	Bar. Corrected. Millimeters.	Bar. Reduced. Inches.	Bar. Reduced. Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Clouds Up'er.	Clouds Low'r.	Upper From—	Lower From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 5′, W. 43° 35′			29.86	758.4	56	13.3		NE			6		4			6		D. clouds	Capt. Alex. Wilson.
Barque Commewyne, N. 27° 20′, W. 47° 55′			29.78	756.4	82	27.8		WSW			6		8			4	WSW	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle, N. 42° 35′, W. 49° 35′			29.57	751.1	54	12.2		NE			5		10			7	E; Confused.	Raining	Capt. W. Waring.
Barque Margaret Smith																			Capt. D. W. A. Quaile.
Schooner Traveller																			Capt. Alex. Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE BULLETIN PRINTING CO. 270 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			
San José	26.21	665.7	29.93	760.2	66.6	19 2	92	NE			1	5ck	5s			0.3	7.6		Mr. Ansart. Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.38	746.2	29.43	747.4	50.7	10.4	78	SW			4		1						
Fanöe	29.24	742.8	29.26	743.3	50.4	10.2	87	S			4		9						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.42	747.3	29.46	748.2	42.8	5.7	83	NNE			6		7						
Vestervig	29.06	738.1	29.23	742.4	47.8	8.8	95	SSE			6		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	28.84	732.4	29.39	746.4	53.6	12	85	SW			3		5		SW	0.012	0.3	Cloudy	Collignon, Director.
Amiens, Normal School	29.13	739.9	29.16	740.7	52.9	11.6	79	S			3		8		NE	0.079	2.0	Very cloudy	Bonvallet, Director.
Avignon, Normal School	29.75	755.6	29.88	757.0	61.9	16.6	53	SE			1		5		SW	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	28.95	735.4	29.50	749.2	55.2	12.9	63	SW			4		10		SW	0.937	23.8	Covered	C. Saillard.
Beauvais, Normal School	29.01	736.9	29.29	744.0	53.4	11.9	78	SW			4		8		WSW	0.098	2.50	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.78	731.0	29.66	753.4	57.6	14.2	40	S			6		2		SW	1.398	35.5	Slightly cl'dy	M. Carre, Director.
Bourg-en-Bresse, N. School	28.88	733.6	29.50	756.8	56.8	13.8	68	S			4		5cn		S	0.63	16.	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.00	736.7	29.55	750.5	58.5	13.6	93	SW			4		10k		SW	0.472	12.00	Covered	A. Waquet, Director.
Brest, Naval Observatory	29.10	739.1	29.34	745.2	57.9	14.4	67	W			4		5		W	0.197	5.00	Squally	M.de Rermaur, Director.
Carcassonne, Normal School	29.35	745.6	29.76	755.9	62.6	17	58	W			2		0			0.08	2.	Clear	Septembre, Director.
Caen	29.17	741.0	29.25	742.9	53.6	12	83	W			6		2		SW	0.55	14.	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	28.80	731.5	29.36	745.7	52.3	11.3	85	SW			4		10		E	0.16	4.	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.10	739.2	29.41	747.1	54.1	12.3	81	SW			4		8kn		SW	0.059	1.5	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.29	718.6	29.61	752.1	60.8	16.0	49	SW			2		5	W	SW	0.110	2.8	Cloudy	Alluard, Director.
Commercy, Normal School	28.71	729.1	29.58	751.2	51.8	11	75	W			4		kn		W	1.18	30.		Dr. Coulet, Director.
Commune de Grèasque*	28.74	730.1	29.89	759.1	60.3	15.7	50	SW			2		10	SW		0	0	Covered	M. Kina.
Grenoble, Normal School	28.95	735.2	29.71	754.6	55.8	13.2	75	NW			1		5os			0.79	20.	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.26	743.1	29.47	748.5	56.1	13.4	84	SW			2		10			0.362	9.2	Covered	Mouillot, Director.
Le Mans, Normal School	29.08	738.6	29.38	746.3	53.6	12	90	W			8		8		W	0.020	0.5	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.78	731.0	29.68	753.8	56.8	13.8	55	S			4		5		SW	1.18	30.	Cloudy	Baudry, Director.
Lorient, Naval Observatory	29.30	744.3	29.40	746.8	58.3	14.6	91	WSW			8				W	0.063	1.6		Lt T. Carré, Director.
Mâcon, Normal School	29.78	756.4	29.81	757.2	57.4	14.1	66	SSE			3		5		SSE	0	0	Cloudy	M. Galzin, Director
Mirecourt, Normal School	28.52	724.5	29 55	750.6	53.4	11.9	71	WSW			4		10n		SE	0.55	14.	Covered	M. Barbier, Director.
Nismes, Normal School	29.02	752.4	29.82	757.5	67.3	19.6	58	SW			1		2		SW	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.72	729.5	29.77	756.1	59.4	15.2	61	S			4		8	S	S	0	0	Very cloudy	M. Cantier.
Puy de Dome (Summit)	24.85	631.1			36.7	2.6	96	W			6		10		SW	0.255	6.5	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.54	750.3	29.57	751.0	58.6	14.8	94	WSW			6		10	WSW	WSW	0.51	13.	Raining	Lt. Decante, Director.
Rouen, Normal School	29.15	740.5	29.24	742.7	57.2	14.0	60	S			6		5	SW	SW	0.268	6.8	Cloudy	Frere Lucard, Director.
Saint Malo (Port)			29.30	744.1	55.4	13.0	66	SW			4		1		WSW	0.236	6.00	Clear	M. H. Hercouet.
Saint Maur, (near Paris)	29.18	741.2	29.35	745.4	52.0	11.1	90	SSW			3		10		SSW	0.331	8.4		E. Renou.
Tarbes, Normal School	28.66	728.0	29.73	755.2	57.2	14	78	SW			2		0			0	0	Clear	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.04	737.6	29.74	755.5	57.4	14.1	76	SE			3		8		SW	0	0	Very cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	82.4	28										0	0		L'Abbé Marchési.
Lyons, Observatory			29.72	754.9	59.9	15.5	46					5				0.039	1.5		
Marseilles, Observatory			29.84	757.8	63.3	17.4	46	SE			0-1	10				0.075	1.90		The Staff.
Mont-Louis	24.64	625.9	29.96	760.9	48.6	9.2	45	S			7	2		SW		0	0		M. Cave.
Nice			29.78	756.4	65.8	18.8	66	SW			6	0				3.052	77.5		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.06	738.0	29.33	745.0	50.9	10.5	94	SW			6	9		SW		0.244	6.2		Marié Davy, Director
Perpignan			29.76	755.8	64.6	18.1	68	E	7.4	3.33		1		S		0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.31	566.6			39.2	4.0		SW			3	1				0	0	Clear	Gen'l de Nansouty
Toulouse, Observatory	29.08	738.7	29.80	756.9	59.2	15.1	55	SE			1	1				0	0		B. Baillaud.
Tours	29.23	742.5	29.43	747.5	55.4	13.0	84	WNW			4	10		WNW		0.307	7.8		C. Marqués.
Versailles			29.33	745.0	53.2	11.8	67	W			4	9				0.268	6.56	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.04	763.0	30.07	763.6	56.1	13.4	96	NE	0.9	0.4		Haze				0	0	Hazy	Marc Deschevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.76	730.4	29.59	751.6	54.3	12.4	69	SE			5		9	SW				Raining	Prof. Dr. Hoh.
Berlin	29.42	747.2	29.59	751.5	55.9	13.3	63	S			4		7			0.055	1.4		Prof. Arndt.
Breslau	29.19	741.5	29.72	754.8	56.3	13.5	70	SSW			2		4			0.132	3.34		Royal University Obs'y
Carlsruhe	29.18	741.2	29.60	751.7	57.2	14.0	59	SW			4		10			0.496	12.6		Albert Senz.
Cassel	28.93	734.8	29.53	750.0	53.6	12.0	66	SSW			4		8	SW		0.057	1.45		Dr. H. Möhl.
Crefeld	29.19	741.3	29.34	745.3	53.2	11.8	77	SE			4		10			0.31	8.	Raining	Director Lose.
Emden	29.31	744.4	29.34	745.3	53.2	11.8	76	S			4		8			0.087	2.2		Prof. Prestel.
Frankfort on the Main	29.23	742.4	29.59	751.5	55.4	13.0		SSW			3		10			0.071	1.8		Physical Society.
Friedrichshafen	28.27	718.1	29.69	754.0	55.4	13.0	67	SSE			2		7	SW		0	0		M. Wilhelm.
Hamburg	29.37	745.9	29.44	747.7	52.9	11.6	71	SSW			5		5cs;ks			0.067	1.7	Fair	Captain F. Hegemann.
Kiel	29.38	746.2	29.40	746.7	51 8	11.0	71	SW			4		8			0.012	0.30		Prof. G. Karsten.
Königsberg, (Prussia)	29.47	748.4	29.55	750.5	51.6	10.9	97	SW			2		8			0.201	5.1		Prof. E Luther.
Köslin			29.53	750.0	51.8	11.0		S			2		3			0.016	0.4		H. Müller.
Leipsic, Observatory	29.21	742.0	29.63	752.5	55.4	13.0	66	S			3		9	SW		0.433	11.0		Prof. Bruhns.
Memel, Naval School	29.47	748.6	29.52	749.8	50.9	10.5	95	Calm			0		10n					Rain & fog	Reinbrecht and Skalweit.
Neufahrwasser	29.59	751.5	29.60	751.9	52.2	11.2	75	WSW			2		7			0.059	1.5		A. Lothes.
Posen	29.39	746.5	29.68	753.8	53.8	12.1	72	SW			2		8			0.055	1.4		Dr. Magener.
Strassburg (in Alsace)	29.08	738.7	29.62	752.4	57.4	14.1	64	S			5		10	SW		0.408	10.36		Astronomical Observatory.
Stuttgart	28.70	728.9	29.62	752.4	56.3	13.5	56	W			2		10			0.008	0.2		Prof. Schoder.
Treves, (Trier)	28.95	735.3	29.47	748.4	53.2	11.8	68	S			6		10			0.373	9.47		Prof. Flesch.
Weissenburg, (Bavaria)	28.19	716.1	29.66	753.3	52.7	11.5	66	SW	6.7	3.0			10			0.188	3.5		Dr. Von Bebber.
Wustrow, Naval School	29.47	748.5	29.49	749.1	52.2	11.2	73	S			4		5ks			0.004	0.1		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.66	753.4	30.04	763.0	77.7	25.4		S			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.42	747.2	29.89	759.1	89.0	31.7	39	NNW					5	N		0	0	D. clouds	
Bombay	29.77	756.1	29.81	757.1	84.3	29.1	83	NW	15	6.7			1		WNW	2.05	52.1	D. clouds	
Poona	27.83	706.9	29.82	757.5	81.0	27.2	56	S					5		S	0	0	D. clouds	
Lahore	29.12	739.8	29.87	758.7	78.9	26.1	33	W	1.5	0.7						0	0	Blue sky	
Belgaum	27.30	693.3	29.83	757.6	77.1	25.1	71	E	1	0.4			3	E		0.03	0.8	D. clouds	
Roorkee	28.90	734.2	29.81	757.2	74.8	23.8	51	NW	2	0.9						0	0		
Agra	29.28	743.8	29.84	757.9	85.7	29.8	32	N								0	0		
Nagpur	28.78	731.1	29.82	757.4	82.6	28.1	42	Calm	2.8	1.2						0	0	Blue sky	
Lucknow	29.45	748.0	29.82	757.4	81.8	27.7	32	Calm	1.0	0.4						0	0	Blue sky	
Allahabad	29.50	749.3	29.81	757.2	76.3	24.6	50	Calm	0.9	0.4						0	0	Blue sky	
Patna	29.64	753.0	29.83	757.6	77.7	25.4	75	Calm	0.2	0.1			0			0	0	Blue sky	
Hazaribagh	27.82	706.5	29.85	758.1	73.6	23.1	48	WNW	5.5	2.5			0			0	0	Blue sky	
Cuttack	29.74	755.3	29.82	757.3	80.0	26.7	62	Calm	1.0	0.4						0	0	Blue sky	
Calcutta (Alipore)	29.81	757.1	29.83	757.7	76.6	24.8	71	NNW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.42	747.1	29.80	757.0	79.7	26.5	55	Calm	5.8	2.6			0			0	0	Blue sky	
Chittagong	29.73	755.1	29.82	757.5	78.4	25.8	60	W	8.2	1.4			0			0	0	Blue sky	
Sibsagar	29.52	749.7	29.86	758.4	73.5	23.1	86	ENE	1.0	0.4			5			0	0	Misty	
Jubbulpore	28.49	723.6	29.84	758.0	83.8	28.8	28	NE	2.2	1.0						0	0	D. clouds	
																		Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.37	746.1	29.78	756.4	64.9	18.3	79	Calm	0	0	.....	.....	3	.....	.....	0.760	19.3	.....	Prof. Giovanni Clodig.
Padua	29.65	753.1	29.76	755.9	67.1	19.5	66	SW	8.7	3.9	.....	.....	5	SW	.....	0.146	3.7	.....	Prof. Dott. Lorenzoni
Vicenza	29.56	750.9	29.76	755.8	65.5	18.6	59	SSW	1.8	0.8	.....	.....	6	W	.....	0.752	19.1	.....	Cont. Alm. Da Schio.
Bergamo	28.45	722.7	29.78	756.3	61.5	16.4	69	WSW	.....	.....	1	.....	5	.....	.....	0.963	24.2	.....	Prof. Trionfini Carlo.
Milan	29.28	742.4	29.74	755.4	61.9	16.6	74	SW	.....	.....	1	.....	5	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.84	732.6	29 75	755.6	56.3	13.5	88	ESE	3.1	1.4	.....	.....	3	.....	.....	0.102	2.6	.....	Prof. P. F. Denza.
Mondovi	27.84	707.0	29.74	755.3	55.2	12.9	80	NW	.....	.....	2	.....	2	SE	.....	0.079	2.0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.54	750.4	29.76	756.0	65.1	18.4	48	WSW	.....	.....	6	.....	0	.....	.....	1.142	29.0	.....	Prof. L. Vassallo.
Genoa	29.62	752.4	29.79	756.7	65.5	18.6	69	SW	10.5	4.7	.....	.....	6	S	.....	0.378	9.6	.....	Prof. G. M. Garibaldi.
Parma	29.46	748.3	29.76	756.0	63.5	17.5	72	SW	.....	.....	4	.....	0	.....	.....	0.043	1.1	.....	Prof. P. Pigorini.
Florence	29.60	751.8	29.83	757.7	70.2	21.2	38	SW	.....	.....	6	.....	2	.....	.....	0.016	0.4	.....	Cav. F. Meucci.
Leghorn	29.74	755.3	29.82	757.4	69.4	20.8	60	SW	17.4	7.8	.....	.....	3	.....	.....	0.039	1.0	.....	Prof. P. Monte.
Pesaro	29.72	754.8	29.76	756.0	72.1	22.3	64	SW	11.9	5.3	.....	.....	8	SW	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.28	718.4	29.82	757.3	65.5	18.6	65	SW	.....	.....	2	.....	2	.....	.....	0.079	2.0	.....	Prof. P. Serpieri
Rome	29.72	755.0	29.90	759.4	73.4	23.0	62	SSW	11.2	5.0	.....	.....	7	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.77	756.2	29.97	761.2	74.8	23.8	73	SW	.....	.....	6	.....	10	SW	.....	0.059	1.5	.....	Prof. L. Palmieri.
Lecce	29.73	755.2	29.98	761.5	72.9	22.7	61	WSW	11.2	5.0	.....	.....	7	SW	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.69	754.0	29.87	758.8	74.8	23.8	65	SE	.....	.....	2	.....	2	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.13	739.9	30.00	761.9	75.6	24.2	71	SE	1.3	0.6	.....	.....	7	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.74	755.3	29.98	761.6	69.3	20.7	43	WSW	12.5	5.6	.....	.....	1	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.97	761.3	30.05	763.2	73.2	22.9	68	S	11.2	5.0	.....	.....	4	SSW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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Note.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 461 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.79	756.6	29.99	761.7	64.1	17.8	84	NE	3.1	1.4	.....	.....	0	.....	.....	0	0	Very clear...	
Tokei (Yeddo) Observatory	30.05	763.3	30.12	765.0	58.4	14.7	82	N	5.4	2.4	.....	.....	10s	.....	.....	0.060	15.2	Cloudy.....	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the Secretary of Public Works.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	63.0	17.2	51	N	.....	.....	4	8c	0	.....	.....	0	0	Cloudy.....	P. Ceballos.
Guadalajara	25.09	637.3	30.16	766.1	52.7	11.5	68	SW	.....	.....	1	0	5	.....	.....	0	0	½ cloudy....	Prof. L. Perez.
Leon	24.45	621.2	30.07	763.9	51.8	11.0	71	NW	.....	.....	1	0	0	.....	.....	0	0	Blue sky.....	Prof. M. Leal.
Mexico	23.18	587.6	30.25	768.3	48.2	9.0	78	Calm	0	0	.....	5c	0	.....	S	0	0	Fair.....	Central Observatory.
Pabello', (Aguascalts)	.....	.....	.....	.....	49.5	9.7	78	W	.....	.....	1	1c	0	W	.....	0	0	Clear.	M. V. de Leon, M. E.
Tlacotalpam	30.03	762.5	30.04	762.8	72.5	22.5	88	SW	.....	.....	1	6	1	N	NE	0	0	Cloudy	M, M. Cházaro.
San Luis Potosi	24.24	615.1	30.19	766.7	43.0	6.1	30	ESE	.....	.....	.....	0	3	.....	ESE	0	0	.....	G. Barroeta, M. D.
Vera-Cruz	30.07	763.8	30.10	764.5	73.4	23.0	74	NW	2.4	1.1	.....	.....	9sk;n	.....	.....	0	0	Very cloudy	Prof. J. Rossell.
Zacatecas	22.57	573.4	30.19	766.9	53.6	12	75	SSE	.....	.....	1	0	1	.....	SSE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.33	592.6	30.09	764.4	46.4	8.0	83	NNE	.....	.....	.....	0	1	.....	Calm	0	0	.....	Prof. P. Spina.
Durango	24.22	615.1	30.07	763.7	59.5	15.3	68	SW	.....	.....	2	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, C. E.
Colima	28.38	720.9	30.01	762.4	77.0	25.0	76	ENE	.....	.....	1	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.89	759.2	30.04	762.9	73.4	23	.....	Calm	.....	.....	0	10ks	.....	.....	.....	0	0	Covered	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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Note.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.6 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.15	740.3	29.15	740.3	53.6	12.0	.....	S	.....	.....	6	.....	.....	.....	.....	0.122	3.1	.....	
Groningen	29.21	741.9	29.26	743.3	52.0	11.1	.....	S	.....	.....	5	.....	.....	.....	.....	0.031	0.8	.....	
Helder	29.13	740.0	29.13	740.0	51.6	10.9	.....	SSE	.....	.....	5	.....	.....	.....	.....	0.126	3.2	.....	
Hellevoetsluis	29.16	740.7	29.16	740.7	52.2	11.2	79	S	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.18	741.2	29.23	742.4	52.7	11.5	79	S	.....	.....	6	.....	10	.....	.....	0.161	4.1	Dull.....	H. v d Bri[illegible]
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.10	739.1	29.15	740.5	48.9	9.4	82	SSE	16.8	7.5	.....	.....	4	.....	.....	0.002	0.2	.....	
Brönö	28.95	735.4	28.99	736.4	48.7	9.3	62	SE	9	4	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.07	738.3	29.21	742.0	49.5	9.7	78	WSW	9	4	.....	.....	2	.....	.....	0.378	9.6	.....	
Tromsö	28.95	735.4	29.00	736.5	43.5	6.4	73	SW	9	4	.....	.....	10	.....	.....	0.291	7.4	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.61	752.1	29.80	756.9	66.9	19.4	85	WNW	4.9	2.2	.....	.....	4	.....	.....	0.906	23.0	.....	Dr. J. A. Sampaio.
Campo Major	28.97	735.9	30.00	761.9	63.1	17.3	67	WSW	7.4	3.3	.....	.....	8	WNW	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.93	760.1	30.01	762.3	73.2	22.9	60	SW	3.8	1.7	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.63	752.5	29.98	761.6	63.3	17.4	79	SW	12.5	5.6	.....	.....	3	.....	.....	0.118	3.0	.....	The Staff.
Ponta Delgada, (Azores)	29.78	756.4	29.85	758.2	70.2	21.2	89	SW	5.6	2.5	.....	.....	3	.....	.....	0.661	16.8	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
Bartholomew Dias				R. A. T. Pinha, Com'd.
D. Fernando				L. M. de Sande, Com'd.
India				A. D. Pedroso, Com'd.
Mindello				J. F. R. R. Bastos, Com'd't.
Quanza, St. Thomas, Gulf of Guinea	1		Blue sky	L. J. de Mattos, Com'd't
Rio Douro				I. T. d'Oliveria, Com'd't
Sá da Bandeira				F. Texeira da Silva, Com'd't.
Sado, N. 14° 53', W. 23° 34'	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo				M. T. Guimaraes, Com'd't.

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.25	742.9	29.67	753.6	50.4	10.2	94	WSW	9	4	.....	.....	10n	.....	.....	.....	.....	Ralning	Astronomical Obs.
Wilna	29.18	741.1	29.59	751.6	55.8	13.2	73	S	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Dorpat	29.29	744.0	29.53	750.1	49.8	9.9	91	S	7	3	.....	.....	10n	.....	.....	.....	.....		Prof. Dr. Weihrauch.
St. Petersburg	29.56	750.9	29.58	751.3	49.8	9.9	89	SSW	20	9	.....	.....	10n	.....	.....	.....	.....		Central Physical Obs.
Kieff	29.24	742.7	29.87	758.7	57.0	13.9	67	S	16	7	.....	.....	6c;ck;	k;e	.....	.....	.....		Physical Cabinet.
Nikolaiev	29.99	761.8	30.07	763.6	61.2	16.2	69	SSW	5	2	.....	.....	8s	.....	.....	.....	.....		Kurdakof.
Kertch	30.07	763.6	30.08	764.1	59.7	15.4	85	N	5	2	.....	.....	4	.....	.....	.....	.....		Lagorio.
Moscow	29.53	750.0	30.08	764.0	54.7	12.6	85	S	7	3	.....	.....	7ks	.....	.....	.....	.....		Meteorological Obs.
Lugan	29.82	757.4	30.02	762.6	54.0	12.2	90	E	9	4	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Archangel	29.61	752.2	29.63	752.7	46.6	8.1	75	SSE	13	6	.....	.....	10	.....	.....	.....	.....		Capt. Sseliwerstow.
Tiflis	28.72	729.6	30.13	765.2	64.4	18.0	67	Calm	0	0	.....	.....	9ks	.....	.....	.....	.....		Physical Observatory
Astrakhan	30.36	771.1	30.28	769.0	52.2	11.2	54	SE	16	7	.....	.....	0	.....	.....	.....	.....		Capt. Wisganow.
Krotkowo*	29.86	758.5	30.35	770.8	45.0	7.2	45	S	9	4	.....	.....	0	.....	.....	.....	.....		Cand. Fatjanow.
Kasan	30.09	764.3	30.37	771.4	45.7	7.6	51	SSE	9	4	.....	.....	6	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Ekaterinburg	29.48	748.7	30.48	774.1	39.7	4.3	38	WSW	7	3	.....	.....	4c;cs	.....	.....	.....	.....		Meteorological Obs.
Nukuss	30.10	764.5	30.34	770.6	46.4	8.0	36	NNE	5	2	.....	.....	7ks	.....	.....	.....	.....		
Tashkend	29.72	729.4	30.49	774.4	45.0	7.2	61	Calm	0	0	.....	.....	0	.....	.....	.....	.....		Teich, A. M.
Barnaul	30.14	765.5	30.71	780.1	18.3	— 7.6	75	Calm	0	0	.....	.....	5	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	30.33	770.3	30.65	778.4	12.0	—11.1	75	W	7	3	.....	.....	10	.....	.....	.....	.....		Marks.
Peking, (China)	29.94	760.4	30.08	764.0	53.1	11.7	96	Calm	0	0	.....	.....	2k	.....	.....	.....	.....		Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor	29.66	753.4	29.75	755.6	39.4	4.1	95	E	9	4	.....	.....	10n	.....	.....	.....	.....		

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 58° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.71	754.6	29.81	757.2	68.9	20.5	55	SW	2.9	1.31	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.71	754.7	29.77	756.1	65.7	18.7	51	W	2.8	1.27	.....	4	3	W	.....	0.102	2.6	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.99	683.8	.....	.....	48.6	9.2	84	SW	10.0	4.19	.....	.....	9	.....	.....	0.079	2.0	Almost cov.	Domingo Martin y Perez
Madrid, Royal Observatory	27.69	703.2	29.89	759.2	60.3	15.7	57	SW	13.4	6.00	.....	2	3	SW	.....	0	0	.....	The Staff.
Murcia, Met. Obs'y	29.75	755.7	29.90	759.4	76.3	24.6	48	SE	1.4	0.61	.....	7	2	.....	.....	0	0	Almost cov.	Olayo Diaz, Director.
Santiago, Met. Obs'y.	28.85	732.9	29.74	755.5	55.6	13.1	91	SW	14.3	6.39	.....	.....	10	.....	.....	0.122	3.1	Raining	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.01	762.3	30.08	763.9	75.8	24.3	75	E	8.1	3.6	.....	0	2k	.....	E	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.8	30.01	762.3	64.9	18.3	78	WNW	7.7	3.4	.....	2	5	W	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.82	757.3	29.91	759.6	79.5	26.4	89	SW	0	0	.....	2s	2k	SE	SE	0	0	Clear	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 866 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.10	739.2	29.14	740.2	43.9	6.6	.....	W	.....	.....	2	.....	10	.....	.....	0.20	5.	.....	
Umea	29.33	744.9	29.38	746.2	45.7	7.6	77	SW	.....	.....	4	.....	10	.....	.....	0.055	1.4	.....	
Hernosand	29.10	739.0	29.15	740.3	46.4	8.0	86	S	.....	.....	6	.....	6	.....	.....	0.157	4.0	Raining	
Stockholm	29.19	741.5	29.37	746.0	49.6	9.8	76	SW	.....	.....	4	.....	5	.....	.....	0.295	7.5	.....	
Wisby	29.36	745.7	29.42	747.2	50.0	10.0	82	WSW	.....	.....	6	.....	3	.....	.....	0.480	12.2	.....	
Sub-Series.																			
Upsala	29.24	742.7	29.32	744.6	50.0	10.0	78	SSW	.....	.....	.....	.....	8	.....	WSW	0.007	0.18	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.29	718.6	29.71	754.5	58.3	14.6	46	SW	.....	.....	5	.....	8	.....	.....	0	0	Cloudy.....	The Observatory.
Zurich	28.09	713.5	29.73	755.1	53.6	12.0	72	W	.....	.....	2	.....	5	.....	.....	1.260	32.0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7.5 mm.; Thermometer, +3.8 cent.; Relative Humidity, —28 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.06	763.5	66.9	19.4	73	SE	4	2.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.11	764.8	74.3	23.5	.....	S	.....	.....	2	.....	2	.....	.....	0	0	Slightlycl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.83	757.7	29.94	760.5	82.0	27.8	61	W	.....	.....	1	.....	2c;k	.....	SW	0	0	D. clouds.....	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.33	770.4	30.40	772.1	47.3	8.5	91	Calm	0	0	.....	.....	8n	.....	.....	0.11	2.8	Clearing.....	Hon. J. Ferguson.
Brockville, Ontario	29.93	760.2	30.24	768.1	41	5.0	.....	Calm	0	0	.....	.....	10s	.....	E	0	0	Cloudy.....	W. R. Bigg.
*Chatham, N. B	30.34	770.6	30.40	772.1	45	7.2	85	N	5	2.2	.....	2k	8s	N	N	0.02	0.5	Cloudy.....	G. A. Blair.
Charlottetown, P. E. Island	30.26	768.6	30.30	769.6	49	9.4	70	N	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	30.04	763.0	30.24	768.1	40.2	4.6	93	N	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	30.26	768.6	30.42	772.7	44	6.7	100	E	.....	.....	1	.....	.....	.....	.....	0.05	1.3	Raining	H. A. Johnson.
Esquimault, B. C	30.42	772.7	30.47	773.9	34.1	1.2	91	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	30.34	770.6	30.37	771 4	43	6.1	96	Calm	0	0	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy.....	J. McWilliams.
Fredericton, N. B	30.34	770.6	30.41	772.4	47.0	8.3	85	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Gloomy.....	Prof. Harrison.
*Fort Garry Manitoba	29.56	750.8	30.46	773.7	18	— 7.8	94	N	9	4.0	.....	5k	5n	N	N	0	0	Cloudy	James Stewart.
Granton, Ontario	29.21	741.9	30.34	770.6	43	6.1	.....	NE	.....	.....	2	.....	10n	.....	.....	0.21	5.3	Raining	James Grant.
*Halifax, N. S	30.11	764.8	30.25	768.3	47	8.3	82	N	9	4.0	.....	.....	10n	.....	N	0	0	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.88	758.9	30.26	768.6	48.7	9.3	92	NE	.....	.....	2	10cs	0	.....	.....	0.33	8.4	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.14	765.6	30.16	766.1	43	6.1	91	NE	.....	.....	2	.....	10	.....	.....	0	0	Overcast.....	E. Weedon.
*Kingston, Ontario	29.89	759.2	30.22	767.6	52	11.1	76	S	14	6.3	.....	.....	10ks	.....	Calm	Inap.	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.20	767.1	30.24	768.1	51.1	10.6	93	SE	10	4.5	.....	4k	0	SE	.....	.....	0	Fair.....	C. H. Rigby.
*Montreal, Quebec	30.08	764.0	30.26	769.1	41	5.0	90	W	15	6.7	.....	8k	2ks	.....	.....	0	0	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.58	751.3	30.29	769.4	43	6.1	89	W	11	4.9	.....	2ok	2ks	SW	SW	Inap.	Inap.	Fair.....	Rev. R. Mosley.
Peterboro, Ontario	29.50	749.3	30.26	768.6	43.7	6.5	92	Calm	.....	.....	0	.....	10	.....	.....	0.28	7.1	Overcast.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.67	751.1	30.26	769.1	47	8.3	100	NW	8	3.6	.....	.....	10n	.....	NW	0.38	9.7	Light rain...	H. Morgan.
Port Hastings, N. S	30.18	766.6	30.22	767.6	51.5	10.8	.....	NW	5	2.2	.....	.....	.....	.....	.....	0	0	Fine.....	Peter Grant.
Port Stanley, Ontario	29.65	753.1	30.30	769.6	46	7.8	93	N	5	2.2	.....	.....	10n	.....	NW	0.27	6.9	Light rain...	M. Payne.
*Quebec, Quebec	30.03	762.7	30.36	771.1	43	6.1	92	Calm	.....	.....	0	.....	10n	.....	Calm	0	0	Cloudy.....	Capt. Ashe, R. N
*Rockliffe, Ontario	29.80	756.9	30.27	768.8	41	5.0	82	S	3	1.3	.....	.....	8s	.....	SW	0	0	Cloudy.....	W. H. McIntyre.
St. Andrews, N. B	30.30	769.6	30.36	771.1	47	8.3	88	NE	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy.....	Dr. Gove.
St. John, N. B	30.20	767.1	30.36	771.1	46	7.2	84	N	10	4.5	.....	.....	10ks	.....	.....	0	0	Overcast.....	G. Murdock, C. E.
*Saugeen, Ontario	29.58	751.3	30.30	769.6	45	7.2	67	NW	16	7.2	.....	.....	10ks	.....	.....	0.03	0.8	Cloudy.....	R. Stewart.
Stayner, Ontario	29.51	749.5	30.30	769.6	47	8.3	81	N	10	4.5	.....	.....	10n	.....	N	0	0	Cloudy.....	R. J. Cole.
Stratford, Ontario	29.00	736.6	30.31	769.9	43.1	6.2	97	NW	3.0	1.3	.....	.....	10s	.....	.....	0.216	5.48	Cloudy.....	C. J. MacGregor, M. A.
*Sydney, C. B	30.20	767.1	30.24	768.1	50	10.0	97	NE	5	2.2	.....	.....	10n	.....	NE	0.06	1.5	Cloudy.....	T. C. Hill.
*Toronto, Ontario	29.89	759.2	30.28	769.1	48	8.9	90	NW	9	4.0	.....	.....	10ks	.....	NW	0.42	10.7	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,122 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30 13	765.3	30.37	771.4	35	1.7	100	Calm	0	0			Fog			0	0	Dense fog.	
Alpena, Michigan	29.67	753.6	30.35	770.9	37	2.8	90	NW	4	1.8			10s		NW	0.30	7.6	Cloudy	
Atlanta, Georgia	29.16	740.7	30.31	769.9	60	15.6	55	S	5	2.2		0	Fog		Calm	0	0	Clear	
Atlantic City, New Jersey	30.37	771.4	30.38	771.6	49	9.4	86	N	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	30.19	766.8	30.38	771.6	51	10.6	93	S	1	0.4			Fog		S	0	0	Foggy	
Baltimore, Maryland	30.33	770.4	30.38	771.6	48	8.9	78	E	2	0.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Barnegat, New Jersey	30.36	771.1	30.39	771.9	50	10.0	79	N	6	2.7		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	28.71	729.2	30.57	776.5	8	—13.3	78	Calm	0	0			10s		Calm	0	0	Cloudy	
Boerne, Texas	28.68	728.5			66	18.9	95	Calm	0	0			10s		Calm	0	0	Cloudy	
Boise City, Idaho	27.58	700.5	30.54	775.7	20	— 6.7	77	SE	1	0.4		0	0			0	0	Clear	
Boston, Massachusetts	30.24	768.1	30.40	772.1	48	8.9	89	NW	6	2.7		1cs	Haze	Calm	NW	0	0	Hazy	
Brackettville, Texas	28.97	735.8	29.98	761.5	67	19.4	79	E	4	1.8		0	5s		E	0	0	Fair	
Breckenridge, Minnesota	29.50	749.3	30.61	777.5	13	—10.6	81	NW	13	5.8		0	0			0	0	Clear	
Brownsville, Texas	30.02	762.5	30.08	764.0	71	21.7	95	NE	2	0.9		0	8s		NE	Inap.	Inap.	Fair	
Buffalo, New York	29.53	750.0	30.24	768.1	48	8.9	100	N	4	1.8			10n		Calm	0.70	17.8	Heavy rain	
Burkes, Arizona					53	11.7	8	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	30.09	764.3	30.36	771.1	42	5.6	74	S	4	1.8		0	0			0	0	Clear	
Cairo, Illinois	29.85	758.2	30.25	768.3	52	11.1	93	NE	6	2.7		8c	2s	W	SW	0	0	Cloudy	
Camp Apache, Arizona	24.63	625.6	29.63	752.6	32	0.0	60	Calm			0	0	0			0	0	Clear	
Camp Grant, Arizona	25.20	640.1	30.00	762.0	54	12.2	21	N			1	5cs	0	Calm		0	0	Fair	
Camp Verde, Arizona	26.91	683.5	30.40	772.1	33	0.6	14	N			1	0	0			0	0	Clear	
Campo, California	27.42	696.5	30.00	762.0	39	3.9	56	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.38	771.1	30.37	771.4	60	15.6	82	NE	7	3.1		2k	0	NE		0	0	Fair	
Cape Henry, Virginia	30.34	770.6	30.36	771.1	58	14.4	82	NE	4	1.8		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.36	771.1	30.37	771.4	57	13.9	87	NE	14	6.3		0	0			0	0	Clear	
Cape May, New Jersey	30.36	771.1	30.39	771.9	50	10.0	86	S	2	0.9		5k	0	S		0	0	Fair	
Castroville, Texas	29.32	744.7	30.03	762.7	61	16.1	94	Calm	0	0		0	0			0	0	Clear	
Charleston, South Carolina	30.33	770.4	30.39	771.9	59	15.0	88	NE	6	2.7		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	— 4	—20.0	67	Calm	0	0		0	5s		Calm	0.04	1.0	Fair	
Chicago, Illinois	29.60	751.8	30.32	770.1	43	6.1	75	N	10	4.5			10s		Calm	0	0	Cloudy	
Cincinnati, Ohio	29.61	752.1	30.27	768.8	53	11.7	80	N	8	3.6			10s		N	0	0	Threatening	
Cleveland, Ohio	29.56	750.8	30.30	769.6	50	10.0	93	N	16	7.2			10n		N	0.08	2.0	Light rain	
Coleman City, Texas	28.41	721.6	30.11	764.3	50	10.0	45	N	14	6.3			10s		NW	0	0	Cloudy	
Columbus, Ohio	29.40	746.7	30.25	768.3	52	11.1	93	N	8	3.6			10s		NW	0	0	Cloudy	
Concho, Texas	28.26	717.8	29.95	760.7	52	11.1	27	NE	8	3.6		10c	0	NE		0	0	Cloudy	
Corsicana, Texas	29.71	754.6	30.18	766.6	57	13.9	63	N	6	2.7			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.77	756.1	30.44	773.2	36	2.2	61	N	12	5.4			10s		N	0	0	Cloudy	
Decatur, Texas	29.07	738.4	30.27	768.8	51	10.6	72	NW	8	3.6			10s			0	0	Cloudy	
Denison, Texas	29.41	747 0	30.22	767.6	52	11.1	66	NW	6	2.7			10ks		SW	0	0	Cloudy	
Denver, Colorado	25.04	636.0	30.26	768.6	14	—10.0	82	SE	2	0.9			10s		Calm	0.55	14.0	Cloudy	
Des Moines, Iowa	29.56	750.8	30.50	774.7	31	—0.6	79	NE	10	4.5			10s		Calm	Inap.	Inap.	Cloudy	
Detroit, Michigan	29.66	753.4	30.35	770.9	42	5.6	91	N	5	2.2			10n		NW	0.66	16.8	Light rain	
Dodge City, Kansas	27.77	705.4	30.24	768.1	25	— 3.9	75	NE	12	5.4			10s		NE	0	0	Cloudy	
Dubuque, Iowa	29.73	755.1	30.48	774.2	33	0.6	70	N	6	2.7			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.74	755.4	30.47	773.9	26	— 3.3	75	Calm	0	0		0	0			0.08	0.8	Clear	
Eagle Pass, Texas	29.29	744.0	30.02	762.5	65	18.3	78	NE	5	2.2		1ck	1s	Calm	Calm	0	0	Fair	
Eastport, Maine	30.29	769.4	30.36	771.1	49	9.4	71	NE	14	6.3			10s		NE	0	0	Cloudy	
Edinburg, Texas					70	21.1	90	Calm			0		10s		Calm	0.01	0.3	Cloudy	
El Paso, Texas					60	15.6	44	W	4	1.8		0	0			0	0	Clear	
Erie, Pennsylvania	29.54	750.3	30.26	768.6	52	11.1	93	N	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Escanaba, Michigan	29.79	756.1	30.42	772.7	29	— 1.7	78	NW	8	3.6		5c	0	NW		0.06	1.5	Fair	
Florence, Arizona	28.50	723.9	30.10	764.5	53	11.7	42	N			1	8c	0	W		0	0	Fair	
Fort Craig, New Mexico	25.60	650.2	29.67	753.6	36	2.2	45	W	1	0.4		5c	0	Calm		0	0	Fair	
Fort Davis, Texas	25.30	642.6	30.26	768.6	50	10.0	42	Calm	0	0		5ck	0	W		0	0	Hazy	
Fort Gibson, Indian Ter	29.66	753.4	30.20	767.1	48	8.9	85	N	12	5.4			10s		N	0	0	Threatening	
Fort Griffin, Texas	28.95	735.3	30.25	768.3	50	10.0	45	N	8	3.6			10s		SW	0	0	Cloudy	
Fort McKavett, Texas	27.94	709.7	29.87	758.7	55	12.8	56	E	6	2.7			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	29.06	738.1	30.21	767.3	44	6.7	67	N	14	6.3			10s		N	0	0	Cloudy	
Fredericksburg, Texas	28.42	721.9	29.95	760.7	70	21.1	75	S	2	0.9			10ks		Calm	0	0	Cloudy	
Galveston, Texas	30.11	764.8	30.15	765.8	78	22.8	85	E	13	5.8			8cs	2ks	SE	E	0	0	Cloudy
Graham, Texas	29.14	740.1	30.21	767.3	51	10.6	53	N	6	2.7			10s		SW	0	0	Cloudy	
Grand Haven, Michigan	29.68	753.9	30.36	771.1	42	5.6	74	NE	9	4.0			10s		Calm	0	0	Cloudy	
Indianapolis, Indiana	29.48	748.3	30.26	768.6	45	7.2	84	NE	9	4.0			10n		NE	1.20	30.5	Light rain	
Indianola, Texas	30.09	764.3	30.12	765.0	72	22.2	90	E	10	4.5		0	1s		Calm	0	0	Clear	
Jacksboro, Texas	29.07	738.4	30.22	767.6	50	10.0	45	N	8	3.6			10s		Calm	0	0	Cloudy	
Jacksonville, Florida	30.28	769.1	30.33	769.6	65	18.3	80	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.73	755.1	30.37	771.4	39	3.9	73	N	11	4.9			10n		NE	Inap	Inap.	Light rain	
Key West, Florida	30.10	764.5	30.13	765.3	73	22.8	81	NE	13	5.8		1ck	1s	E	Calm	0	0	Clear	
Hawk, North Carolina	30.36	771.1	30.38	771.6	60	15.6	77	NE	12	5.4		0	0			0	0	Clear	
Knoxville, Tennessee	29.33	745.0	30.36	771.1	48	8.9	85	Calm	0	0		1c	Fg;sm'	NW	E	0	0	Clear	
La Crosse, Wisconsin	29.70	754.4	30.49	774.4	31.5	—0.3	69	N	6	2.7			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	39	3.9	63	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.64	752.8	29.98	761.5	69	20.6	80	E	2	0.9		5ck	0	E		0	0	Fair	
Lead City, Dakota	25.05	636.3	30.32	770.1	7	—13.9	77	Calm	0	0			10s		Calm	0.12	3.0	Cloudy	
Leavenworth, Kansas	29.50	749.3	30.40	772.1	30	— 1.1	100	N	14	6.3			10n		Calm	0.10	2.5	Light snow	
Los Angeles, California	29.62	752.3	29.96	761.0	50	10.0	79	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.66	753.4	30.22	767.6	54	12.2	80	N	8	3.6		5ck	1s	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.67	753.6	30.37	771.4	46	7.8	77	SE	2	0.9		0	Haze			0	0	Hazy	
Madison, Wisconsin	29.39	746.5	30.44	773.2	33	0.6	70	N	12	5.4			10s		N	0	0	Cloudy	
Marquette, Michigan	29.66	753.4	30.40	772.1	32	0.0	79	W	4	1.8		2c	2ks	Calm	W	0.27	6.9	Fair	
Mason, Texas	28.51	724.1	30.29	769.4	54	12.2	73	NW	2	0.9		5k	0	S		0	0	Fair	
Memphis, Tennessee																			
Milwaukee, Wisconsin	29.62	752.3	30.38	771.6	37	2.8	71	N	9	4.0			10s		Calm	0	0	Cloudy	
Mobile, Alabama	30.26	768.6	30.30	769.6	59	15.0	96	S	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	30.10	764.5	30.34	770.6	51	10.6	86	SE	2	0.9		0	0			0	0	Clear	
Morgantown, West Virginia	29.23	742.4	30.31	769.9	46	7.8	84	SW	1	0.4		0	Fog		Calm	0	0	Clear	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	35	1.7	90	NW	5	2.2		2c	5ks	Calm	NW	0	0	Clear?	
Nashville, Tennessee	29.74	755.4	30.28	769.1	54	12.2	80	SE	1	0.4		8c	Sm'e	SW	Calm	0	0	Fair	
New Haven, Connecticut	30.28	769.1	30.40	772.1	46	7.8	77	N	5	2.2		0	5s		SE	0	0	Fair	
New London, Connecticut	30.36	771.1	30.41	772.4	46	7.8	92	N	6	2.7		0	2s;fg		N	0	0	Fair	
New Orleans, Louisiana	30.17	766.3	30.23	767.8	67	19.4	84	E	8	3.6		5k	0	SE		0	0	Fair	
Newport, Rhode Island	30.35	770.9	30.40	772.1	50	10.0	79	N	4	1.8		2c	0			0	0	Clear	
New York, New York	30.22	767.6	30.40	772.1	51	10.6	78	N	1	0.4		Haze	Haze			0	0	Dense haze	
Norfolk, Virginia	30.34	770.6	30.40	772.1	51	10.6	93	Calm	0	0			Fog			0	0	Foggy	
North Platte, Nebraska	27.52	699.0	30.34	770.6	19	— 7.2	85	NE	12	5.4			10n		Calm	0.02	0.5	Light snow	
Olympia, Washington Ter	30.45	773.4	30.50	774.7	29	— 1.7	89	E	3	1.3		0	0			0	0	Clear	
Omaha, Nebraska	29.30	744 2	30.49	774.4	26	— 3.3	88	N	14	6.3			10n		Calm	0.01	0.3	Light snow	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.94	760.5	30.27	768.8	48	8.9	70	S	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Pembina, Dakota	29.64	752.8	30.54	775.7	15	— 9.4	82	NW	10	4.6	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Philadelphia, Pa	30.35	770.9	30.40	772.1	48	8.9	78	E	5	2.2	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.74	730.0	.....	.....	54	12.2	38	SE	.....	.....	1	5c	0	W	.....	0	0	Fair	
Pike's Peak, Colorado	17.50	444.5	29.72	754.9	—12	—24.4	100	SW	10	4.5	.....	.....	8k	.....	SW	0.02	0.5	Cloudy	
Pioche, Nevada	24.24	615.7	30.01	762.2	21	— 6.1	57	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.44	747.8	30.27	768.8	47	8.3	92	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.65	753.1	30.33	770.4	42	5.6	91	NW	8	3.6	.....	.....	10n	.....	Calm	0.27	6.9	Light rain	
Portland, Maine	30.32	770.1	30.37	771.4	50	10.0	72	N	8	3.6	.....	2k	Haze	Calm	.....	0	0	Fair	
Portland, Oregon	30.38	771.6	30.50	774.7	37.0	2.8	71	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.87	631.7	30.23	767.8	26	— 3.3	52	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.39	746.5	30.19	766.8	59	15.0	76	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.20	767.1	30.22	767.6	69	20.6	80	NE	10	4.5	.....	2k	0	NE	.....	0	0	Clear	
Red Bluff, California	29.72	754.9	30.08	764.0	56	13.3	19	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.90	759.4	30.12	765.0	70	21.1	85	E	.....	.....	1	.....	10ks	.....	SE	0	0	Cloudy	
Rochester, New York	29.62	752.3	30.23	767.8	52	11.1	73	SW	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Roseburg, Oregon	29.78	756.4	30.39	771.9	29.6	— 1.7	94	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Sacramento, California	29.95	760.7	30.03	762.7	47	8.3	48	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.69	754.1	30.28	769.1	43	6.1	92	NE	17	7.6	.....	.....	10s	.....	.....	0.73	18.5	Cloudy	
St. Marks, Florida	30.30	769.6	30.31	769.9	56	13.3	94	NE	4	1.8	.....	0	1s	.....	Calm	0	0	Clear	
St. Paul, Minnesota	29.62	752.3	30.51	774.9	26	— 3.3	64	NW	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Salt Lake City, Utah	25.97	659.6	30.30	769.6	26.0	— 3.3	63	E	3	1.3	.....	5k	0	Calm	.....	0.02	0.5	Fair	
San Antonio, Texas	29.43	747.5	30.01	762.2	65	18.3	94	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.92	760.0	30.00	762.0	57	13.9	94	NE	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.64	752.8	30.33	770.4	47	8.3	85	N	24	10.7	.....	.....	10n	.....	N	0.42	10.7	Light rain	
Sandy Hook, New Jersey	30.36	771.1	30.39	771.9	51	10.6	79	N	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
San Francisco, California	29.94	760.5	30.01	762.2	56	13.3	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	27	— 2.8	43	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.26	768.6	30.36	771.1	55	12.8	93	N	6	2.7	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.98	761.5	30.19	766.8	64	17.8	89	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.33	618.0	.....	.....	45	7.2	44	SW	6	2.7	.....	2c	0	Calm	.....	0	0	Fair	
Smithville, North Carolina	30.35	770.9	30.39	771.9	54	12.2	93	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.28	769.1	30.42	772.7	42	5.6	74	Calm	0	0	.....	.....	10s	.....	N	0	0	Cloudy	
Stockton, Texas	27.16	689.8	30.16	766.1	45	7.2	60	NE	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Thatcher's Island, Mass.	30.36	771.1	30.42	772.7	52	11.1	86	NE	6	2.7	.....	0	8s	.....	N	0	0	Clearing	
Toledo, Ohio,	29.61	752.1	30.31	769.9	43	6.1	92	NW	10	4.5	.....	.....	10s	.....	NW	0.53	13.5	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	61	16.1	31	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.32	770.1	30.35	770.9	63	17.2	80	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	30.24	768.1	.....	.....	26.0	— 3.3	75	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	43	6.1	100	SE	.....	.....	2	.....	10n	.....	S	0.51	13.0	Raining	
Uvalde, Texas	29.32	742.2	30.03	762.7	63	17.2	83	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	30.03	762.7	30.29	769.4	61	16.1	88	SE	8	3.6	.....	8k	0	S	.....	0	0	Fair	
Virginia City, Montana	24.45	621.0	29.93	760.2	10	—12.2	79	Calm	0	0	.....	0	2s	.....	Calm	0	0	Clear	
Visalia, California	29.69	754.1	30.07	763.8	45	7.2	84	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.28	769.1	30.40	772.1	45	7.2	92	Calm	0	0	.....	5cs	Fog	SW	S	0	0	Foggy	
Wickenburg, Arizona	.....	.....	.....	.....	44	6.7	37	NE	.....	.....	1	5c	0	Calm	.....	0	0	Fair	
Wilmington, N. Carolina	30.28	769.1	30.36	771.1	54	12.2	79	NE	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Winnemucca, Nevada	25.94	658.9	30.30	769.6	16	— 8.9	66	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	30.33	770.4	30.38	771.6	56	13.3	74	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Yankton, Dakota	29.28	743.7	30.70	779.8	20	— 6.7	77	N	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Yuma, Arizona	29.78	756.4	29.94	760.5	67	19.4	20	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.88	758.9	29.93	760.2	9.0	—12.8	80	NW	10	4.5	.....	.....	10n	.....	NW	0.09	2.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba. W. I.	30.05	763.3	30.07	763.8	77	25.0	69	E	3.6	1.6	.....	4k	4n	E	E	0	0	Cloudy	Chas. Hasselbrink.
Santiago de Cuba, W. I.	29.93	760 2	29.96	761.0	77	25.0	82	N	.....	.....	1	0	4s	.....	N	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	84	28.9	79	Calm	0	0	.....	2c	2ks	E	.....	0.61	15.5	Clear	G. O. Gellich.
Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	79	26.1	90	Calm	0	0	.....	5c	2s	Calm	SE	1.05	26.7	.....	James Gall.
Navassa, W. I.	29.83	757.7	29.91	759.7	79	26.1	.....	NE	24	10.7	.....	.....	.....	.....	.....	1.11	28.2	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.93	760.2	29.93	760.2	78	25.6	91	SE	.....	.....	3	4c	5k	E	.....	0	0	Fair	C. J. Hering
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	64.5	18.1	87	Calm	0	0	.....	.....	10s; ks	.....	.....	0.43	10.9	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.75	755.6	30.06	763.5	76	24.4	95	NW	.....	.....	.....	.....	n	.....	.....	.....	.....	Squally	Robert Elworthy.
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NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,560 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.6 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.38	771 6	65	18.3	65	18.3	92	NE	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.27‡	768.8‡	.....	.....	48	8.9	85	WNW	1	0.4	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy.....	
Naval Hospital, Yokohama, Japan.....	30.07*	763.8*	62.5	16.9	60	15.6	76	NW	.....	.....	3	.....	10ks	.....	SE	0	0	.....	.....	Cloudy.....	
Adams. Valparaiso, Chili.....	29.89	759.2	63	17.2	60	15.6	88	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Fair.....	
Alaska. S. 10° 18′, W. 79° 14′.....	30.03	762.7	67	19.4	61	16.1	94	E	.....	.....	1	.....	10	.....	E	0	0	Long	S	Misty.....	
Alliance, Smyrna, Turkey.....	30.01‡	762.2‡	.....	.....	72	22.2	62	W	.....	.....	3–4	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.03	762.7	68	20.0	67	19.4	84	NE	.....	.....	2	.....	8	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
Canonicus, New Orleans, La.....	30.18	766.6	50	10.0	66	18.9	94	NE	.....	.....	3	.....	2	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado, New York, N. Y.....	30.40‡	772.1‡	.....	.....	51	10.6	79	NNE	2	0.9	.....	.....	8	.....	NE	0	0	.....	.....	Dense haze..	
Constitution, Havre, France.....	.....	.....	.....	.....	54	12.2	93	SSW	.....	.....	6	.....	7	.....	SW	.....	.....	.....	.....	Cloudy	
Despatch, Constantinople, Turkey	30.06‡	763.5‡	.....	.....	73	22.8	54	S	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Essex, Cape Town.....	30.00	762.0	63	17.2	63	17.2	100	NNW	.....	.....	5	.....	10	.....	N	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va.....	30.45	773.4	61	16.1	50	10.0	100	Calm	0	0	.....	.....	2	.....	Calm	0	0	.....	.....	Fair	
Gettysburg Jaffa, Syria.....	29.89‡	759.2‡	.....	.....	76	24.4	95	NNW	.....	.....	3	.....	2	.....	N	0	0	Smooth	.....	D. clouds.....	
Guard. N. 14° 43′, W. 47° 48′.....	29.95	760.7	84	28.9	82	27.8	83	ESE	.....	.....	4	.....	2	.....	ESE	.....	.....	Long	ESE	Clear.....	
Hartford. St. Catherine Strait.....	29.80	756.9	74	23.3	69	20.6	90	S	3.0	1.3	.....	.....	10	.....	S	0.29	7.4	Smooth	.....	Light rain ..	
Marion. N. 38° 20′, E. 16° 52′.....	30.04	763.0	73	22.8	74	23.3	68	SW	.....	.....	2	.....	0	.....	.....	0	0	Smooth	SW	Clear	
Michigan, Erie, Pa.....	30.09†	764.3†	.....	.....	53	11.7	86	NNW	.....	.....	4	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Monocacy. Yokohama, Japan	30.11‡	764.8‡	.....	.....	61	16.1	77	NNW	.....	.....	2–3	.....	10	.....	NNW	.....	.....	.....	.....	Cloudy	
New Hampshire, Port Royal, S. C.....	30.53	775.4	71	21.7	66	18.9	89	NNE	8	3.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.02†	762.5†	.....	.....	63	17.2	89	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.08	764.0	63	17.2	55	12.8	87	S	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Fair	
Passaic, Washington, D. C.....	.....	.....	.....	.....	46	7.8	77	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Plymouth. Santa Cruz, W. I.....	30.03	762.7	83	28.3	83	28.3	83	NE	.....	.....	1	.....	2	.....	.....	.....	.....	Light	S	Clear	
Powhatan, New York, N. Y.....	30.37‡	771.4‡	.....	.....	57	13.9	63	NE	3.6	1.6	.....	.....	.....	.....	.....	0	0	.....	.....	Overcast.....	
Quinnebang, Norfolk, Va...	30.40‡	772.1‡	.....	.....	49	9.4	93	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Ranger. Hong-Kong, China.....	30.05	763.3	81	27.2	80	26.7	82	E	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas.....	30.06	763.5	71	21.7	71	21.7	100	NNW	.....	.....	2–3	.....	10	.....	S	.....	.....	.....	.....	Cloudy	
Santee, Annapolis, Md...	30.34‡	770.6‡	.....	.....	50	10.0	93	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Saratoga. Philadelphia, Pa.....	30.30	769.6	.....	.....	47	8.3	77	E	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Raining.....	
St. Louis, League Island, Pa	30.35	770.9	58	14.4	49	9.4	85	E	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Supply, Havre, France.....	29.26	743.2	61	16.1	55	12.8	87	WSW	.....	.....	5–6	.....	8	.....	.....	.....	.....	.....	.....	Showery.....	
Trenton, Villafranca, France.....	29.62‡	752.3‡	.....	.....	68	20.0	60	SSW	.....	.....	3	.....	2	.....	S;W	.....	.....	.....	.....	Clear	
Vandalia, Villafranca, France	29.77‡	756.1‡	.....	.....	67	19.4	47	SSW	.....	.....	3–6	.....	2	.....	SW	.....	.....	Mod'ate	SW	Squally.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	50	10.0	86	NW	3	1.3	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES. Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 28° 26′, E. 125° 02′		30.01*	762.2*	73	22.8	100	N			4		6		N				D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima, N. 34° 38′, W. 121° 28′		30.00*	762.0*	54	12.2	??	Calm			0		10		Calm	0	Mod'ate	WNW	Foggy	Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T.		30.46*	773.4*	40	4.4	74	N			1		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 50° 32′, W. 20° 19′		29.81†	757.2†	56	13.3		NNW			4		8ck		NNW	0	Moderate; high	NNW	Fair	Capt. W. H. Thompson.
S. S. Celtic, N. 40° 43′, W. 68° 58′		29.95*	760.7*	64	17.8	??	NNE			6		10		NE	0	Heavy	NNE	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 36° 08′, W. 180° 36′		29.98*	761.5*	61	16.1	71	NE			4		k		NE	0	Rough	NE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 16′, W. 29° 8′		29.96	761.0	53.0	11.7	67	NNE			6		8		NE	0	5	NE	Overcast	Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 40° 07', W. 64° 54'		30.17*	766.3*	63	17.2	94	NNE			7		10		NNE	Light	Mod'ate	ENE	Cloudy	Captain Sargent.
S. S. Ohio, N. 51° 43', W. 19° 56'		29.68	753.9	53	11.7	86	N			5		7?		N		Mod'ate	N	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 41° 06' W. 65° 34'		30.22*	767.6*				N	18	8.0			10		N		Mod'ate	NE	Cloudy	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 12° 37', W. 69° 08'		29.62	757.4	84	28.9	75	E	11	4.9		2ck	5s		E	0	Swell	NE	Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.,) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 27, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.87	758.7	72.3	22.4	76	WNW	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Kesxuche.
Algiers	.....	.....	29.80	757.0	74.5	23.6	66	NE	.....	.....	1	.....	3	.....	.....	Inap.	Inap.	Pretty fair.	Tourilliere.
La Calle	.....	.....	29.83	757.6	76.3	24.6	68	E	.....	.....	1	.....	3	.....	.....	0	0	Pretty fair.	Foufrede.
Tunis	.....	.....	29.85	758.2	84.9	29.4	44	N	.....	.....	1	.....	4	.....	.....	0	0	Cloudy	Jacques.
Sfax	.....	.....	30.04	763.0	80.6	27.0	.....	S	.....	.....	3	.....	3	.....	.....	0	0	Pretty fair.	Gau.
Saida	.....	.....	29.88	759.0	77.0	25.0	34	W	.....	.....	6	.....	3	.....	.....	0	0	Pretty fair.	Herbin.
Tebessa	.....	.....	29.88	758.9	77.4	25.2	35	SW	.....	.....	4	.....	3	.....	.....	0	0	Pretty fair.	Watrin.
Geriville	.....	.....	29.91	759.8	68.3	17.4	72	S	.....	.....	3	.....	8	.....	.....	0	0	Very cloudy	Brugniaux.
Laghouat	.....	.....	29.93	760.3	78.1	25.6	29	NNE	.....	.....	3	.....	1	.....	.....	0	0	Very fair.	Bertrand.
Biskra	.....	.....	29.94	760.5	83.3	28.5	42	SE	.....	.....	3	.....	1	.....	.....	0	0	Very fair.	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.22	742.1	29.75	755.6	67.6	19.8	66	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	Prof. Ivan Stoär.
Cracow, I. R. Observatory	28.95	735.3	29.71	754.5	56.5	13.6	87	SSW	.....	.....	1	.....	8	.....	.....	0.012	0.3	.....	Dr. Wierzbiski
Eperies	28.86	733.1	29.72	755.0	59.4	15.2	81	S	.....	.....	2	.....	6cks	.....	N	0.049	1.25	.....	Julius Mikoina.
Gratz	28.47	723.0	29.69	754.2	59.7	15.4	73	S	.....	.....	1	.....	3	.....	.....	0.234	5.95	.....	Andreas Rospini.
Hermannstadt	28.41	721.7	29.85	758.3	65.1	18.4	56	SE	.....	.....	1	.....	5	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.25	717.5	29.56	750.9	55.8	13.2	71	ENE	.....	.....	3	.....	0	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.75	730.3	29.72	754.8	64.0	17.8	69	SW	.....	.....	3	.....	2	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.65	753.2	29.76	756.0	68.9	20.5	83	SSE	.....	.....	2	.....	10s	.....	.....	0.260	6.6	.....	I.R.Hydrographic Office
Szathmar	29.40	746.8	29 86	758.4	63.9	17.7	78	SE	.....	.....	3	.....	8	.....	.....	0.012	0.3	.....	Julius Osics, S. J.
Szegedin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Karl Stancel.
Trieste	29.68	753.8	29.78	756.4	67.6	19.8	89	W	.....	.....	1	.....	8	.....	.....	0.386	9.8	Raining	P. Busin.
Vienna	29.00	736.7	29.72	754.8	52.0	11.1	86	Calm	.....	.....	0	.....	3	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1.337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.717	18.2	.....	Prof. M. Passau.
Brussels	29.28	743.8	29.48	748.8	52.3	11.8	72	SW	.....	.....	3	1	6	SW	WSW	0.112	2.85	.....	Royal Observatory
Furnes	29.48	748.8	29.50	749.4	50.5	10.3	95	SW	.....	.....	1	.....	8	.....	.....	0.035	0.9	.....	M. E. de Cae
Maeseyck	29.38	746.2	29.51	749.5	51.8	11.0	81	SW	.....	.....	2	.....	10	.....	.....	0.063	1.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

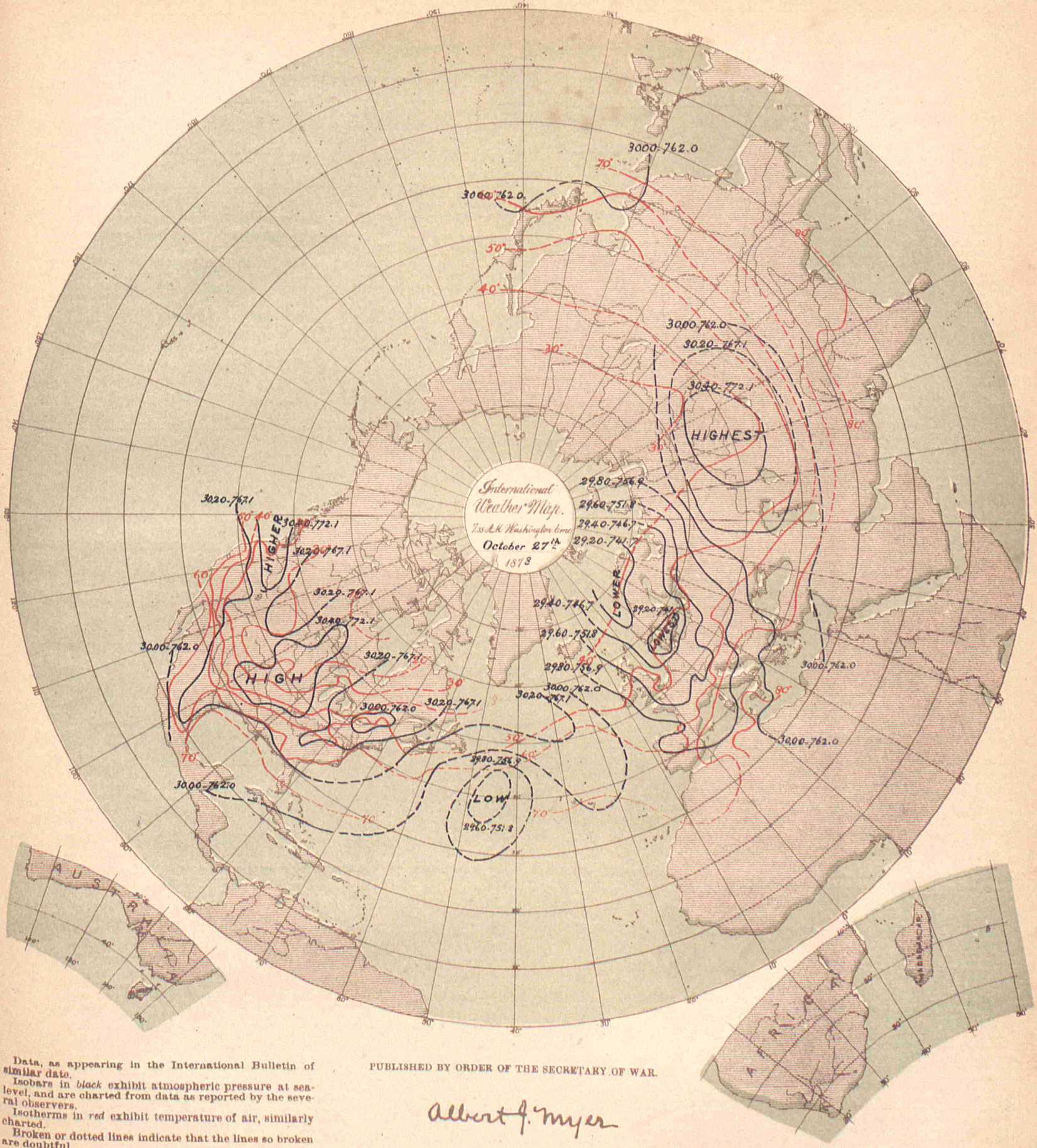
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.41	747.0	29.61	749.5	47.2	8.4	.....	NW	27	12.1	.....	.....	3	.....	.....	0.070	1.78	Blue sky.....	W. Boswell.
Ardrossan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Carrick.
Armagh, Observatory	.....	.....	29.69	754.1	48.7	9.3	.....	NW	6	2.7	.....	.....	.....	.....	.....	.....	.....	.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.57	751.1	50.8	10.4	.....	NW	12	5.4	.....	.....	2	.....	.....	.....	.....	Blue sky.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	J. McLandsborough.
Bridgetown, (Barbados)	29.83	757.7	29.86	758.4	82.5	28.1	.....	E	.....	.....	2	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.52	749.8	53.0	11.7	.....	NW	.....	.....	1	.....	0?	.....	.....	.....	.....	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	29.52	749.8	49.0	9.4	.....	NW	.....	.....	1	.....	1	.....	.....	.....	.....	Blue sky.....	John McLaren.
Chatham, School M. E.	29.37	746.0	29.50	749.3	48.2	9.0	.....	NW	.....	.....	2	.....	7	.....	.....	.....	.....	D. clouds..	Lt. G. W. Morris, R. E.
Dartmoor	28.12	714.2	29.59	751.6	47.0	8.3	.....	N	.....	.....	2	.....	3	.....	.....	.....	.....	Fine.....	Alexander Watt.
Donaghadee	29.59	751.6	29.62	752.3	51	10.6	.....	NNE	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds....	J. Mac Gowan.
Dover	29.51	749.5	29.54	750.3	48	8.9	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast....	J. Costello.
Falmouth, Observatory	29.45	748.0	29.68	753.9	52.9	11.6	.....	NNW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds....	The Staff.
Fort Napier, (Natal)	27.41	696.2	29.73	755.1	83.6	28.7	.....	E	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.67	753.6	29.90	759.4	86	30.0	.....	W	.....	.....	0	.....	3	.....	.....	.....	.....	D. clouds....	
Galway, Queen's College	.....	.....	29.76	755.9	48	8.9	.....	NW	.....	.....	3	.....	7	.....	.....	.....	.....	D. clouds....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.62	757.4	29.87	758.7	.....	.....	.....	SW	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds....	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.35	745.5	29.56	750.8	50.9	10.5	.....	NW	.....	.....	3	.....	4	.....	.....	.....	.....	D. clouds....	D. G. Maclean.
Great Yarmouth	29.46	748.3	29.46	748.3	50	10 0	.....	NW	.....	.....	2	.....	4	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.34	745.2	29.52	749.8	48.9	9.4	.....	N	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds....	The Staff, for G. B. Airy.
Guernsey	29.36	745.7	29.58	751.3	52	11.1	.....	NW	.....	.....	3	.....	6	.....	.....	.....	.....	D. clouds....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.71	754.6	49	9.4	.....	N	.....	.....	4	.....	c	.....	.....	0.26	6.6	Fine.....	M. P. Moyle.
Holyhead	29.57	751.1	29.62	752.3	53	11.7	.....	N	.....	.....	4	.....	5	.....	.....	Blank	Blank	Blue sky.....	John Tilston.
Jerse	29.30	744.2	29.59	751.6	52.6	11.4	.....	N	.....	.....	3	.....	7	.....	.....	.....	.....	Showery	J. Fisher.
Kew, Observatory	29.49	749.0	29.53	750.0	49.9	9 9	.....	NNW	8	3.6	.....	.....	6	.....	.....	.....	.....	D. clouds....	The Staff.
Kingstown	29.65	753.1	29.68	753.9	51	10.6	.....	NW	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds....	George Mitchell.
Leicester, Museum	.....	.....	29.52	749.8	51.2	10.7	.....	NW	.....	.....	1	.....	9	.....	.....	.....	.....	D. clouds....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.91	759.7	29.98	761.5	76	24.4	.....	SE	.....	.....	2	.....	3k	.....	.....	.....	.....	Blue sky.....	Sergt. Beckett.
Nairn	29.46	748.3	29.55	750.6	47	8.3	.....	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	¼ clouded..	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.06	763.5	72.0	22.2	.....	NE	.....	.....	3	.....	8	.....	.....	.....	.....	Drizzling....	C. S. Duncombe.
Nottingham, Observatory	29.34	745.2	29.53	750.0	51.5	10.8	.....	NW	.....	.....	2	.....	1k	.....	N	0.008	0.20	Blue sky.....	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.02	737.1	29.54	750 3	51.0	10.6	.....	NNW	.....	.....	3	.....	9	.....	.....	.....	.....	D. clouds....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.54	750.3	50	10.0	.....	NW	.....	.....	1	.....	0	.....	.....	.....	.....	Blue sky.....	H. E. Bellamy.
Plymouth	29.53	750.0	29.60	751.8	52.6	11.4	.....	NNW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds....	John Merrifield.
Roche's Point	29.74	755.4	29.78	756.4	51	10.6	.....	NNW	.....	.....	5	.....	2	.....	.....	.....	.....	Fine.....	W. Kennedy.
Saint Ann's Head	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.52	749.8	46.4	8.0	.....	NNW	20	8.9	.....	.....	5	.....	.....	.....	.....	D. clouds....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)	.....	.....	29.97	761.2	68.5	20.3	.....	SW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	Sergt. W. H. Lyne.
Sheffield	29.18	741.2	29.46	748.3	50.1	10.1	.....	N	.....	.....	2	.....	10	.....	.....	0.09	2.3	Overcast....	W. F. Cooper.
Silloth, Rectory	29.54	750.3	29.57	751.1	51.5	10.8	72	N	.....	.....	2	.....	2	.....	.....	0	0	D. clouds....	C. Edith Redford.
Stonyhurst, Observatory	29.17	740.9	29.57	751.1	48.8	9.3	.....	NW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds....	Rev. S. J. Perry.
Straitfield Turgiss	29.33	745.0	29.54	750.3	58.5	14.7	.....	NW	.....	.....	1	.....	8	.....	.....	.....	.....	D. clouds....	Rev. C. H. Grimth, F. M. S
Thurso	29.46	748.3	29.52	749.8	48	8.9	.....	NNW	.....	.....	4	.....	7	.....	.....	.....	.....	Showery....	John Trotter.
Truro, Royal Institution	.....	.....	29.68	753.9	55	12.8	.....	NW	.....	.....	6	.....	10	.....	.....	.....	.....	Raining.....	W. Newcombe.
Valencia, Observatory	29.83	757.7	29.86	758.4	50.5	10.3	.....	NNW	15	6.7	.....	.....	8	.....	.....	Blank	Blank	D. clouds....	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	29.94	760.5	40.0	4.4	76	S	.....	.....	3	.....	5k	.....	.....	0.01	0.3	.....	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.86	758.4	30.05	763.2	78.9	26.1	60	E	15.5	6.9	.....	0	4	.....	ESE	0	0	Fine.....	C. Meldrum.
Melbourne, Observatory	29.76	755.9	29.86	758.7	67.0	19.4	56	NE	6	2.7	.....	.....	8	.....	.....	0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Wind. Direction. From—	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Low'r 0—10.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 20′, W. 44° 0′	.....	.....	29.61	757.2	54	12.2	ENE	.....	6	8	6	.....	Squally.....	Capt. Alex. Wilson.
Barque Commewyne, N. 29° 0′, W. 45° 35′	.....	.....	29.80	756.9	75	23.9	SSW	5	7	3	SSW	D. clouds.....	Capt. A. Buchan.
S. S. Gordon Castle, N. 43° 35′, W. 46° 25′	.....	.....	29.45	748.0	66	18.0	ENE	6	9	8	Confused.	Showery.....	Capt. W. Waring.
Barque Margaret Smith	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			Mr. Ansart.
San José	26.19	665.2	29.91	759.7	66.6	19.2	100	SE			1	2clk	6s		E	Inap.	Inap.		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.22	742.3	29.27	743.5	50.9	10.5	73	SW			6		9						
Fanöe	29.08	738.5	29.10	739.0	52.0	11.1	93	WSW			4		5						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.50	749.2	29.53	750.1	41.5	5.3	71	N			2		7						
Vestervig	28.96	735.6	29.19	739.9	50.7	10.4	93	E			2		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.03	737.4	29.58	751.4	50.0	10	89	W			1		10			0.504	12.8	Covered	Collignon, Director.
Amiens, Normal School	29.45	748.1	29.56	750.9	50.4	10.2	86	S			2		2		NE	0	0	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	29.58	751.3	29.66	753 3	64.9	18.3	71	SSW			1		8		SSW	0	0	Very cloudy	M. Giraud, Director.
Bar-sur-Seine	28.99	736.4	29.54	750.4	50.2	10.1	89	SSW			2		10			1.024	26.0	Light rain	C. Saillard.
Beauvais, Normal School	29.24	742.7	29.52	749.7	54.8	12.4	72	W			1		8		W	0.167	4.25	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.76	730.4	29.65	753.0	50.9	10.5	86	S			6		10		SW	0.067	1.7	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	28.78	731.0	29.69	754.0	53.8	12.1	98	SW			1		10n		SW	0.08	2.	Raining	M. Marlot, Director.
Bourges, Normal School	29.08	738.6	29.59	751.6	49.6	9.8	81	SW			2		10kn		SW	1.181	30.00	Raining	A. Waquet, Director
Brest, Naval Observatory	29.40	746.8	29.65	753.0	55.8	13.2	61	N			2		4		N	0.059	1.50	Squally	M.de Rermaur, Director.
Carcassonne, Normal School	29.34	745.1	29.74	755.5	56.5	13.6	82	W			2		8	W	E	0	0	Very cloudy	Septembre, Director.
Caen	29.46	748.2	29.53	750 1	50.7	10.4	92	W			1		5		W	0	0	Partly cl'dy	M. Lair, Director.
Chartres, Normal School	28.97	735.7	29.53	750.1	47.1	8.4	94	E			1		10		W	0.08	2.	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.21	741.9	29.52	749.9	51.4	10.8	90	SW			1		8cn		SW	0.236	6.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs.	28.28	718.3	29.61	752.2	55.2	12.9	47	SW			2		5		SW	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	28.74	730.0	29.61	752.2	49.8	9.9	89	SW			1		n		SW	0.94	24.		Dr. Coulet, Director.
Commune de Grèasque*	28.00	726.5	29.74	755.5	62.5	17.1	73	S			2		10	S		0.031	0.8	Light rain	M. Kina.
Grenoble, Normal School	28.78	730.9	29.52	749.8	61.9	16.6	64	S			4		10n		S	0	0	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.39	746.4	29.60	751.8	54.0	12.2	67	W			1		5		W	0.409	10.4	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.26	743.1	29.56	750.8	51.8	11	77	NW			2		8		WNW	0.32	8.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	28.73	729.8	29.65	753.0	51.1	10.6	95	SW			1		10		W	0.20	5.	Raining	Baudry, Director.
Lorient, Naval Observatory	29.56	750.8	29.66	753.3	53.2	11.8	80	NNW			3			SW	N	0.059	1.5		Lt.T. Carré, Director.
Mâcon, Normal School	29.74	755.5	29.78	756.3	54.0	12.2	87	Calm			0		10			0	0	Covered	M. Galzin, Director
Mirecourt, Normal School	28.54	724.8	29.57	751.0	48.9	9.4	86	S			3		6k		NE	0.43	11.	Raining	M. Barbier, Director.
Nismes, Normal School	29 46	748.2	29.66	753.3	66.6	19.2	68	SW			1		2		SW	0	0	Slightly cl'dy	Boyer, Director.
Privas, Normal School	28.63	727.2	29.68	753.8	59.4	15.2	78	S			4		8	S	S	0	0	Very cloudy	M. Cantier.
Puy de Dome (Summit)	24.59	624.5			32.5	0.3	100	W			6		Fog			0.051	1.3	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.63	752.6	29.66	753.4	55.4	13.0	88	W			2		2	W	W	0.12	3.	¾ covered	Lt. Decante, Director.
Rouen, Normal School	29.42	747.3	29.51	749.5	51.8	11.0	75	W			1		10		W	0.055	1.4	Covered	Frere Lucard, Director.
Saint Malo (Port)			29.58	751.4	52.3	11.3	75	N			3		8		NNW	0.038	0.97	Very cloudy	M. H. Herconet.
Saint Maur, (near Paris)	29.35	745.5	29.52	749.7	53.6	12.0	76	SW			1		9	SSW	WSW	0.118	3.0		E. Renou.
Tarbes, Normal School	28.59	726.2	29.66	753.4	59.0	15	78	SW			4		10			0.67	17.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.02	737.2	29.74	755.4	62.7	11.5	95	WSW			1		10		SW	0	0	Covered	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.78	756.5	29.81	757.2	82.4	28										0	0		L'Abbé Marchés.
Lyons, Observatory			29.62	752.3	57.7	14.3	66						10			0.020	0.5		
Marseilles, Observatory			29.67	753.6	68.2	20.1	70	S			2		9			Inap.	Inap.	Very cloudy	The Staff.
Mont-Louis	24.57	624.1	29.89	759.1	48.7	9.3	49	SSW			4		5		SW	0	0		M. Cave.
Nice			29.75	755.7	64.4	18.0	78	NW			1		5					Light rain	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.23	742.4	29.50	749.4	53.2	11.8	81	SSW			2		10		SW	0.016	0.4		Marié Davy, Director
Perpignan			29.70	754.4	60.3	15.7	71	NE	9.3	4.17			9		NW	0.016	0.4		Dr. Fines.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.25	565.1			29.3	1.5		Calm			0		10			0.539	13.7	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.06	738.2	29.78	756.4	53.8	12.1	88	W			2		10			0.126	3.20	Raining	B. Bailand.
Tours	29.37	746.0	29.67	753.0	52.5	11.4	80	WNW			3		8		WNW	0 102	2.6		C. Marquet.
Versailles			29.51	749.6	52.0	11.1	67	SW			1		10			0.003	0.07	Showery	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.00	762.0	30.03	762.7	57.2	14.0	97	NNW	7.4	3.3			9kn			0.012	0.3	Covered	Marc Dechevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.72	729.4	29.55	750.5	52.5	11.4	89	SE			4		10	W		0.12	3.	Raining	Prof. Dr. Hoh.
Berlin	29.37	746.1	29.54	750.4	55.0	12.8	68	S			1		6			0.026	0.7		Prof. Arndt.
Breslau	29.14	740.1	29.66	753.4	58.1	14.5	68	SSE			2		2			0	0		Royal University Obs'y
Carlsruhe	29.14	740.1	29.56	750.8	50.0	10.0	92	SW			1		10			0.846	21.5	Raining	Albert Senz.
Cassel	28.92	734.5	29.52	749.7	52.9	11.6	74	SSE			2		7	SW		0.117	2.98		Dr. H. Möhl.
Crefeld	29.32	744.6	29.47	748.6	54.1	12.3	71	SW			2		9			0.04	1.		Director Lose.
Emden	29.44	747.7	29.47	748.6	51.6	10.9	83	WSW			5		5			0.087	2.2		Prof. Prestel.
Frankfort on the Main	29.21	741.9	29.57	751.1	52.5	11.4		SSW			1		10			0.268	6.8	Raining	Physical Society.
Friedrichshafen	28.17	715.6	29.58	751.3	56.5	13.6	63	NW			1		8	S		0.799	20.3		M. Wilhelm.
Hamburg	29.34	745.1	29.41	746.9	52.9	11.6	77	SW			6		6k			0.043	1.1	Fair	Captain F. Hegemann.
Kiel	29.30	744.2	29.32	744.6	51.8	11.0	69	SW			6		9			0.161	4.11		Prof. G. Karsten.
Königsberg, (Prussia)	29.48	748.7	29.56	750.8	53.6	12.0	76	SW			5		4			0.039	1.0		Prof. E. Luther.
Köslin			29.47	748.6	52.0	11.1		SW			4		4			0	0		H. Müller.
Leipsic, Observatory	29.15	740.4	29.57	751.0	52.9	11.6	79	SSW			2		9	SW		0	0		Prof. Bruhns.
Memel, Naval School	29.51	749.6	29.56	750.8	50.0	10.0	86	S			5		10n					Raining	Reinbrecht and Skalweit.
Neufahrwasser	29.52	749.7	29.53	750 1	55.2	12.9	75	SSW			3		10	SW		0	0		A. Lothes.
Posen	29.34	745.2	29.63	752.5	56.3	13.5	67	SW			5.		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.06	738.0	29.60	751.9	52.0	11.1	90	E			1		10	SW		0.033	0.85	Raining	Astronomical Observatory.
Stuttgart	28.62	727.0	29.55	750.6	51.8	11.0	75	W			2		10			0.461	11.7	Raining	Prof. Schoder.
Treves, (Trier)	28.99	736.3	29.50	749.4	51.6	10.9	85	W			1		10			0.055	1.40	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.13	714.4	29.59	751.6	56.1	13.4	62	WSW	5.6	2.5			8ck		W	0.024	0.6	Foggy	Dr. Von Bebber.
Wustrow, Naval School	29.38	746.3	29.41	746.9	51.8	11.0	67	S			5		4s			0.083	2.1		E. F. Schütz.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.5	30.00	762.1	76.6	24.8		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.40	746.9	29.88	758.8	89.1	31.7	36	Calm					1	SSW		0	0	D. clouds	
Bombay	29.76	755.9	29.80	756.9	84.1	28.9	79	NW	12	5.4			0			0	0	Blue sky	
Poona	27.85	707.3	29.83	757.7	82.9	28.3	49	E					6		E	0	0	D. clouds	
Lahore	29.11	739.4	29.86	758.5	74.8	23.8	48	Calm	0.7	0.3						0	0	Blue sky	
Belgaum	27.29	693.2	29.82	757.5	76.9	24.9	68	N	1	0.4			3	E	ENE	0	0	D. clouds	
Roorkee	28.92	734.7	29.83	757.7	74.8	23.8	48	Calm	1	0.4						0	0		
Agra	29.28	743.6	29.84	757.8	83.7	28.7	28	NW								0	0		
Nagpur	28.80	731.4	29.83	757.7	83.1	28.4	39	Calm	2.8	1.2			0			0	0	Blue sky	
Lucknow	29.44	747.8	29.81	757.2	83.3	28.5	29	Calm	1.1	0.5						0	0	Blue sky	
Allahabad	29.61	749.6	29.83	757.6	73.9	23.3	46	Calm	0.8	0.4			0			0	0	Blue sky	
Patna	29.65	753.2	29.84	757.8	79.7	26.5	72	Calm	0.2	0.1			0			0	0	Blue sky	
Hazaribagh	27.83	706.8	29.85	758.2	74.6	23.7	42	WNW	3.6	1.6			0			0	0	Blue sky	
Cuttack	29.76	755.8	29.84	757.9	78.0	25.6	70	Calm	1.5	0.7						0	0	Blue sky	
Calcutta (Alipore)	29.82	757.4	29.84	758.0	77.0	25.0	80	N	2.0	0.9			0			0	0	Blue sky	
Goalpara	29.43	747.5	29.82	757.4	79.3	26.3	65	ESE	3.1	1.4			2			0	0	D. clouds	
Chittagong	29.75	755.6	29.84	758.0	78.4	25.8	90	Calm	3.7	1.6			0			0	0	Misty	
Sibsagar	29.52	749.8	29.86	758.4	78.7	25.9	71	Calm	1.1	0.5			4			0	0	Blue sky	
Jubbulpore	28.49	723.7	29.85	758.3	81.3	27.4	33	Calm	1.8	0.8						0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.40	746.7	29.80	757.0	64.0	17.8	69	Calm	0	0	.....	.....	9	.....	.....	0	0	.....	Prof. Giovanni Clodig.
Padua	29.66	753.4	29.77	756.2	63.1	17.3	69	NNW	8.1	3.6	.....	.....	10	SSW	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.60	751.7	29.76	755.8	60.8	16.0	71	N	1.8	0.8	.....	.....	5	W.	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.44	722.4	29.76	756.0	54.3	12.4	86	NE	.....	.....	2	.....	10	.....	.....	0.567	14.4	.....	Prof. Trionfini Carlo.
Milan	29.24	742.6	29.75	755.6	57.4	14.1	86	E	.....	.....	4	.....	10	SE	.....	0.098	2.5	.....	Prof. Schiaparelli.
Moncalieri	28.83	732.3	29.74	755.3	57.7	14.3	83	ESE	1.3	0.6	.....	.....	8	N	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.85	707.3	29.75	755.6	54.5	12.5	79	NW	.....	.....	4	.....	9	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.52	749.7	29.74	755.3	66.9	19.4	65	SW	.....	.....	2	.....	5	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.57	751.1	29.74	755.3	65.7	18.7	84	SE	9.4	4.2	.....	.....	10	SW	.....	0.839	21.3	.....	Prof. G. M. Garibaldi.
Parma	29.45	748.0	29.80	756.8	56.5	13.6	89	E	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.52	749.9	29.78	756.4	68.9	20.5	75	SW	.....	.....	2	.....	10	SW	.....	0	0	.....	Cav. F. Meucci.
Leghorn	29.71	754.5	29.79	756.6	70.2	21.2	83	S	8.1	3.6	.....	.....	9	.....	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.71	754.6	29.76	755.9	74.1	23.4	53	SE	6.9	3.1	.....	.....	7	.....	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.29	718.5	29.82	757.5	65.1	18.4	65	SW	.....	.....	2	.....	5	.....	.....	0.197	5.0	.....	Prof. P. Serpieri
Rome	29.59	751.5	29.92	759.9	72.0	22.2	81	S	8.1	3.6	.....	.....	10	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.72	755.0	29.92	760.0	74.1	23.4	70	SE	.....	.....	6	.....	10	SW	.....	0.004	0.1	.....	Prof. L. Palmieri.
Lecce	29.74	755.5	29.99	761.8	76.1	24.5	55	WSW	15.0	6.7	.....	.....	4	SW	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.61	752.0	29.80	756.8	73.4	23.0	71	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.02	737 2	29.89	759.2	75.0	23.9	76	SW	0.7	0.3	.....	.....	3	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.67	753.7	29.92	760.0	81.9	27.7	38	WSW	15.0	6.7	.....	.....	2	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.93	760 1	30.00	762.0	75.7	24.3	79	SW	11.2	5.0	.....	.....	7	SW	.....	0	0	.....	Prof. V. Giuliano.
Sub-Series.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.72	754.9	29.92	759.9	65.4	18.6	89	ESE	1.9	0.8	.....	.....	0	.....	.....	0.050	1.27	Fair	.....
Tokei (Yeddo) Observatory	29.97	761.2	30.04	763.0	59.3	15.2	92	NW	5.4	2.4	.....	0	0	.....	.....	0	0	Clear	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. P. V. Veeder.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	60.8	16.0	51	N	.....	.....	4	0	0	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.08	637.0	30.15	765 9	52.7	11.5	68	SW	.....	.....	1	0	1	.....	.....	0	0	Clear	Prof. L. Perez.
Leon	24.46	621.5	30.06	763.6	55.8	13.2	81	SSW	.....	.....	2	1c	0	Calm	.....	0	0	Clear	Prof. M. Leal.
Mexico	23.16	588.2	30.22	767.7	51.4	10.8	88	Calm	0	0	.....	0	9k	.....	S	0	0	Cloudy	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	52.5	11.4	67	W	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	30.00	762.0	30.02	762.4	73.9	23.3	90	W	.....	.....	3	6	2	E	N	0	0	Cloudy	M, M. Cházaro.
San Luis Potosí	24.27	615.7	30.27	768.9	45.0	7.8	29	E	.....	.....	.....	0	10	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	30.06	763.4	30.09	764.1	76.1	24.5	79	NW	.....	.....	.....	1ck	8sk	SW	N	0.039	1.0	Very cloudy	Prof. J. Rossell.
Zacatecas	22.58	573.9	30.19	766.9	54.5	12.5	74	SSE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.31	592.2	30.08	764.0	46.8	8.2	74	N	2.7	1.2	.....	0	1	.....	Calm	1.771	45.0	Clear	Prof. P. Spina.
Durango	24.21	614.8	30.06	763.6	57.8	14.3	83	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.36	720.3	29.99	761.7	77.9	25.5	78	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.87	758.6	30.02	762.4	73.8	23.2	.....	N	.....	.....	.....	7ks	3n	.....	N	0	0	Covered	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,560.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosí, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.48	748.9	29.48	748.9	52.5	11.4	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.197	5.0	.....	
Groningen	29.33	745.0	29.39	746.4	50.2	10.1	.....	SW	.....	.....	4	.....	.....	.....	.....	0.322	8.2	.....	
Helder	29.39	746.6	29.39	746.6	53.4	11.9	.....	SW	.....	.....	4	.....	.....	.....	.....	0.012	0.3	.....	
Hellevoetsluis	29.46	748.2	29.46	748.2	50.2	10.1	92	SW	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.43	747.4	29.47	748.6	49.6	9.8	86	SW	.....	.....	2	.....	8	.....	.....	0.063	1.6	Very cloudy	H. v d Broek.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.17	740.9	29.22	742.3	45.0	7.2	77	SSE	0.4	0.2	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.19	741.3	29.22	742.3	45.7	7.6	83	SSW	18	8	.....	.....	9	.....	.....	0.362	9.2	.....	
Christiania	29.10	739.1	29.24	742.8	45.1	7.3	91	NNE	9	4	.....	.....	10	.....	.....	0.173	4.4	Light rain.	
Tromsö	29.13	739.8	29.17	740.9	38.8	3.8	83	Calm	0	0	.....	.....	10	.....	.....	0.118	3.0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.82	757.4	30.01	762.2	66.0	18.9	90	SE	4.3	1.9	.....	.....	5	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	28.82	731.9	29.84	757.9	61.7	16.5	90	SW	8.7	3.9	.....	.....	10	SW	.....	.....	.....	Light rain...	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.89	759.1	29.97	761.3	73.4	23.0	70	W	15.0	6.7	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.47	748.5	29.83	757.6	63.9	17.7	93	WSW	9.8	4.4	.....	.....	10	.....	.....	0.087	2.2	.....	The Staff.
Ponta Delgada, (Azores)	29.95	760.8	30.02	762.6	70.9	21.6	80	E	0.7	0.3	.....	.....	4	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 0 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza,				
St. Thomas, Gulf of Guinea	1	.....	Overcast	A. J. de Mattos, Com' d't
Rio Douro	.....	.....	.....	J. T. d'Oliveria, Com' d't
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd 't.
Sado, N. 14° 53′, W. 23° 34′	1	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Note.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.22	742.3	29.64	752.8	57.2	14.0	84	SSE	7	3	.....	.....	8cks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.30	744.2	29.72	754.8	51.3	10.7	79	SSW	2	1	.....	.....	9	.....	.....	.....	.....	Heavy clouds ...	Astronomical Obs.
Dorpat	29.40	746.8	29.65	753.0	50.2	10.1	87	S	7	3	.....	.....	9nks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.62	752.3	29.63	752.7	51.1	10.6	83	WSW	9	4	.....	.....	2ks	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.22	742.1	29.84	757.9	60.3	15.7	75	SSW	7	3	.....	.....	3c;ck	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.95	760.7	30.02	762.5	66.2	19.0	75	SSW	13	6	.....	.....	4k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.09	764.3	30.11	764.8	63.7	17.6	78	N	5	2	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.36	745.8	29.91	759.8	53.1	11.7	83	SSW	9	4	.....	.....	9ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.85	758.3	30.06	763.4	50.3	13.5	88	E	2	1	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.37	746.1	29.89	746.6	44.4	6.9	98	S	5	2	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sseliwerstow.
Tiflis	28.65	727.8	30.05	763.2	65.3	18.5	64	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.33	770.4	30.25	768.3	52.0	11.1	60	ESE	13	6	.....	.....	7ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.76	755.8	30.24	768.0	46.2	7.9	44	S	13	6	.....	.....	0	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.97	761.3	30.25	768.4	46.0	7.8	48	SSE	9	4	.....	.....	1	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.37	746.0	30.36	771.1	43.2	6 2	27	WSW	5	2	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	762.9	30.28	769.0	47.1	8.4	55	NNE	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	
Tashkend	28.62	726.9	30.39	771.9	42.1	5.6	74	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.96	761.0	30.51	775.0	31.1	— 0.5	92	SW	0	0	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Yeniseisk	29.71	754.5	30.01	762.2	27.9	— 2.3	94	S	16	7	.....	.....	10	.....	.....	.....	.....	Raining	Marks.
Peking, (China)	29.84	757.9	29.98	761.5	45.9	7.7	53	NW	5	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.74	755.3	29.82	757.5	30.6	— 0.8	85	W	11	5	.....	.....	5km	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.3 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 46° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.59	751.6	29.69	754.2	69.3	20.7	48	WSW	3.9	1.75	.....	.....	2ck	.....	.....	0.493	12.52	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	29.78	756.5	29.84	757.9	59.5	15.3	76	NW	5.2	2.33	.....	2	6	NW	.....	0.051	1.3	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.87	682.5	.....	.....	50.4	10.2	80	SW	13.2	5.89	.....	.....	6	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.55	699.8	29.77	756.1	55.8	13.2	97	SW	20.9	9.34	.....	0	10	.....	.....	0.067	1.7	Rainy	The Staff.
Murcia, Met. Obs'y	29.65	753.1	29.80	756.8	73.2	22.9	52	SSW	0.9	0.42	.....	2	5	SE	.....	0.160	3.81	Almost cov'd	Mayo Diaz, Director.
Santiago, Met. Obs'y.	28.91	734.2	29.80	756.8	57.0	13.9	66	NE	11.2	5.00	.....	.....	5	.....	.....	1.051	26.7	Cloudy	t. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.00	762.0	30.07	763.6	72.3	22.4	84	ESE	3.4	1.5	.....	0	1k	.....	.....	0.017	0.3	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
Sao Fernando, Naval Obs'y	29.81	757.2	29.91	759.7	67.8	19.9	74	SW	10.1	4.5	.....	3	3	SW	SW	0.033	0.8	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.80	757.0	29.89	759.3	77.0	25.0	98	SE	5.6	2.52	.....	5kn	5k	SE	SE	0.610	15.50	Raining	Leonardo de Tejeda, Ch't Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer: Corrected for instru'tal error and temperature. Inches.	Barometer: Corrected for instru'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low't 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.22	742.2	29.26	743.2	43.2	6.2	.....	SW	.....	.....	2	.....	9	.....	.....	0.47	12.	.....	
Umea	29.22	742.3	29.28	743.6	44.6	7.0	85	W	.....	.....	2	.....	8	.....	.....	0	0	.....	
Hernosand	29.24	742.8	29.30	744.1	46.8	8.2	65	SW	.....	.....	2	.....	3	.....	.....	0	0	.....	
Stockholm	29.13	739.8	29.30	744.8	47.1	8.4	92	SSW	.....	.....	2	.....	10	.....	.....	0	0	.....	
Wisby	29.14	740.1	29.20	741.6	52.2	11.2	88	SW	.....	.....	7	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.22	742.3	29.30	744.2	46.8	8.2	88	ESE	.....	.....	.....	.....	10	.....	SSE	0.232	5.90	Raining	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.18	715.7	29.59	751.6	58.1	14.5	66	SSW	.....	.....	2	.....	10	.....	.....	0.012	0.3	Covered	The Observatory.
Zurich	28.00	711.3	29.64	752.8	55.2	12.9	73	W	.....	.....	2	.....	9	.....	.....	0.850	21.6	Covered	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —10.4 mm.; Thermometer, +3.9 cent.; Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.03	762.7	67.3	19.6	66	SE	4	2.0	.....	6	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.08	764.1	75.6	24.2	.....	S	.....	.....	2	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.84	757.9	29.95	760.7	77.0	25.0	58	NW	.....	.....	2	1k	.....	N	0	0	D. clouds	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Brockville, Ontario	29.63	752.6	29.94	760.5	44	6.7	.....	Calm	0	0	.....	.....	10n	.....	W	0.30	7.6	Light rain	W. R. Bigg.
*Chatham, N. B	30.17	766.3	30.24	768.1	43	6.1	87	S	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.17	766.3	30.21	767.3	47	8.3	95	Calm	0	0	.....	.....	10s	.....	Calm	0.065	1.65	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.69	754.1	29.89	759.2	44.5	7.0	98	W	.....	.....	1	.....	10s	.....	.....	0.065	1.65	Foggy	James Smith, M. A.
Dalhousie, N. B	30.02	762.5	30.18	766.6	43	6.1	89	S	.....	.....	1	.....	.....	.....	.....	0.04	1.0	Overcast	H. A. Johnson.
Esquimault, B. C	30.34	770.6	30.38	771.6	35.1	1.7	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear	W. H. Bevis.
*Father Point, Quebec	30.00	762.0	30.02	762.5	49	9.4	80	SW	7	3.1	.....	5k	5n	SW	S	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.18	766.6	30.25	768.3	45.4	7.4	85	SE	10	4.5	.....	.....	10s	.....	.....	Inap	Inap.	Gloomy	Prof. Harrison.
*Fort Garry Manitoba	29.53	750.0	30.43	772.9	14	—10.0	93	W	5	2.2	.....	2ck	5ks	W	W	0	0	Clearing	James Stewart.
Granton, Ontario	28.94	735.1	30.08	764.0	36	2.2	.....	N	.....	.....	1	.....	10n	.....	.....	0.70	17.8	Cloudy	James Grant.
*Halifax, N. S	30.04	763.0	30.17	766.3	45	7.2	92	NW	4	1.8	.....	.....	10n	.....	N	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.61	752.1	30.00	762.0	38.7	3.7	94	NE	.....	.....	2	10cs	0	Calm	.....	0.80	20.3	Raining	Geo. Dickson, M. A.
Heart's Content, N. F	30.05	763.3	30.07	763.8	48	8.9	92	NE	.....	.....	1	.....	10	.....	.....	0.02	0.5	Foggy	E. Weedon.
*Kingston, Ontario	29.58	751.3	29.91	759.7	54	12.2	89	S	6	2.7	.....	.....	10ks	.....	SW	0.64	16.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.11	764.8	30.15	765.8	45.5	7.5	82	E	8	3.6	.....	.....	10n	.....	.....	0.10	2.5	Overcast	C. H. Rigby.
*Montreal, Quebec	29.76	755.6	29.95	760.7	51	10.6	82	SW	14	6.3	.....	.....	10ks	.....	NW	0.02	0.5	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.38	746.2	30.10	764.5	33	0.6	89	N	14	6.3	.....	2ck	2ks	SW	SW	0.10	2.5	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.22	742.2	29.99	761.7	37.7	3.2	90	N	.....	.....	1	.....	10	.....	.....	0.17	4.3	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.33	745.0	30.04	763.0	38	3.3	100	N	7	3.1	.....	.....	10n	.....	NE	0.60	15.2	Threatening	H. Morgan.
Port Hastings, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Peter Grant.
Port Stanley, Ontario	29.41	747.0	30.08	764.0	39	3.9	90	W	4	1.8	.....	.....	10n	.....	N	0.64	16.3	Cloudy	M. Payne.
*Quebec, Quebec	29.71	754.6	30.03	762.7	49	9.4	82	NE	.....	.....	.....	2k	2ks	NE	NE	0	0	Fair	Capt. Ashe, R. N
*Rockliffe, Ontario	29.62	752.3	30.10	764.5	34	1.1	89	N	3	1.3	.....	.....	10s	.....	N	0.18	3.3	Light snow	W. H. McIntyre.
St. Andrews, N. B	30.18	766.6	30.23	767.8	46	7.8	86	S	1	0.4	.....	.....	10n	.....	.....	0	0	Cloudy	Dr. Grove.
St. John, N. B	30.05	763.3	30.22	767.6	45	7.2	91	N	2	0.9	.....	.....	10s	.....	.....	0	0	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.37	746.0	30.11	764.8	36	2.2	85	NE	14	6.3	.....	5k	0	N	.....	0.08	2.0	Fair	K. Stewart.
Stayner, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. J. Cole.
Stratford, Ontario	28.70	730.5	30.08	764.0	32.7	2.6	92	NW	3.0	1.3	.....	.....	10n	.....	.....	0.586	14.88	Cloudy	C. J. MacGregor, M.
*Sydney, C. B	30.14	765.5	30.18	766.6	47	8.3	86	N	7	3.1	.....	.....	10s	.....	N	Inap.	Inap.	Cloudy	T. C. Hill.
*Toronto, Ontario	29.62	752.3	30.01	762.2	39	3.9	86	N	13	5.8	.....	.....	10n	.....	Calm	0.63	16.0	Light rain	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	48.0	8.9	92	NE	.....	.....	.....	.....	10	.....	.....	0	0	Overcast	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the **SECRETARY OF WAR.** UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.87	758.7	30.09	764.3	53	11.7	80	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Alpena, Michigan	29.48	748.8	30.16	766.1	33	0.6	89	NW	9	4.0	.....	5ck	5ks	W	NW	0.12	3.0	Cloudy.	
Atlanta, Georgia	29.04	737.6	30.19	766.8	56	13.3	74	SW	6	2.7	.....	2ck	2s;sm'e	SW	Calm	0	0	Fair	
Atlantic City, New Jersey	30.20	767.1	30.21	767.3	58	14.4	87	S	13	5.8	.....	2k	0	Calm	.....	0	0	Fair	
Augusta, Georgia	30.09	764.3	30.28	769.1	51	10.6	93	Calm	0	0	.....	5ck	2s;fog	SW	Calm	0	0	Cloudy	
Baltimore, Maryland	30.13	765.3	30.16	766.6	54	12.2	93	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Barnegat, New Jersey	30.20	767.1	30.22	767.6	59	15.0	82	S	14	6.3	.....	2c	5s	W	S	0	0	Fair	
Bismarck, Dakota	28.42	721.9	30.26	769.1	15	— 9.4	82	SE	7	3.1	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	
Boerne, Texas	28.73	729.7	.....	.....	48	8.9	70	N	18	8.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.57	700.3	30.53	775.4	26	— 3.3	82	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.08	764.0	30.24	768.1	50	10.0	93	S	5	2.2	.....	.....	10s;fog;	.....	sw;Calm	0	0	Cloudy	
Brackettville, Texas	29.21	741.9	30.20	769.4	44	6.7	92	N	14	6.3	.....	.....	10s	.....	Calm	0	0	Threatening	
Breckenridge, Minnesota	29.35	745.5	30.44	773.2	17	— 8.3	83	Calm	0	0	.....	.....	10ks	.....	W	0	0	Cloudy	
Brownsville, Texas	30.05	763.3	30.12	765.0	69	20.6	95	NE	8	3.6	.....	.....	10s	.....	NE	0	0	Cloudy	
Buffalo, New York	29.26	743.2	29.96	761.0	43	6.1	100	NW	8	3.6	.....	.....	10n	.....	NW	0.85	21.6	Light rain	
Burkes, Arizona	.....	.....	.....	.....	56	13.3	9	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.78	756.4	30.04	763.0	52	11.1	79	S	24	10.7	.....	2c	2s	W	W	0	0	Fair	
Cairo, Illinois	30.03	762.7	30.44	773.2	40	4.4	78	N	9	4.0	.....	.....	10s	.....	N	0.15	3.8	Cloudy	
Camp Apache, Arizona	24.70	627.4	29.70	754.4	24	— 4.4	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.36	644.1	30.16	766 1	46	7.8	19	SW	.....	.....	2	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.95	684.5	30.44	773.2	30	— 1.1	47	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.52	699.0	30.09	764.3	58	14.4	26	E	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.26	768.6	30.27	768.8	65	18.3	89	NE	3	1.3	.....	2k	0	SW	.....	0	0	Fair	
Cape Henry, Virginia	30.19	766.8	30.22	767.6	55	12.8	81	SE	8	3.6	.....	5cs	0	SW	.....	0	0	Fair	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	61	16.1	94	NE	7	3.1	.....	2c	0	W	.....	0	0	Fair	
Cape May, New Jersey	30.19	766.8	30.22	767.6	60	15.6	82	S	20	8.9	.....	2c	0	W	.....	0	0	Fair	
Castroville, Texas	29.52	749.8	30.25	768.3	51	10.6	59	N	10	4.5	.....	.....	10s	.....	N	0	0	Clear	
Charleston, South Carolina	30.21	767.3	30.28	769.1	60	15.6	94	NE	5	2.2	.....	0	0	.....	.....	0	0	Cloudy	
Cheyenne, Wyoming	24.15	613.4	30.09	764.3	22	— 5.6	72	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.53	750.0	30.26	768.6	33	0.6	89	NW	8	3.6	.....	.....	10n	.....	NW	1.19	30.2	Light snow	
Cincinnati, Ohio	29.61	752.1	30.28	769.1	44	6.7	76	NW	10	4.5	.....	.....	10ks	.....	NW	0.34	8.6	Cloudy	
Cleveland, Ohio	29.38	746.2	30.12	765.0	43	6.1	92	SW	16	7.2	.....	.....	10n	.....	W	0.60	15.2	Light rain	
Coleman City, Texas	28.64	727.4	30.41	772.4	35	1.7	70	N	22	9.8	.....	.....	10s	.....	N	0.35	8.9	Cloudy	
Columbus, Ohio	29.34	745.2	30.20	767.1	42	5.6	75	NW	10	4.5	.....	.....	10s	.....	NW	0.37	9.4	Cloudy	
Concho, Texas	28.46	722.9	30.24	768.1	36	2.2	52	NE	12	5.4	.....	.....	10s	.....	NE	0	0	Cloudy	
Corsicana, Texas	29.95	760.7	30.45	773.4	41	5.0	65	N	14	6.3	.....	.....	10s	.....	N	0	0	Cloudy	
Davenport, Iowa	29.75	755.6	30.43	772.9	28	— 2.2	77	NW	8	3.6	.....	4k	0	NW	.....	0.16	4.1	Fair	
Decatur, Texas	29.29	744.0	30.54	775.7	35	1.7	90	N	20	8.9	.....	.....	10s	.....	N	0	0	Cloudy	
Denison, Texas	29.65	753.1	30.54	775.7	36	2.2	71	N	10	4.5	.....	.....	10s	.....	N	0	0	Cloudy	
Denver, Colorado	25.02	635.5	30.24	768.1	15	— 9.4	66	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.57	751.1	30.54	775.7	16	— 8.9	83	Calm	0	0	.....	0	0	.....	.....	0.11	2.8	Clear	
Detroit, Michigan	29.43	747.5	30.12	765.0	38	3.3	91	N	6	2.7	.....	.....	10n	.....	N	0.91	23.1	Light rain	
Dodge City, Kansas	27.82	706.6	30.39	771.9	11	—11.7	80	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.65	753.1	30.40	772.1	28	— 2.2	77	NW	7	3.1	.....	.....	10n	.....	NW	Inap.	Inap.	Light snow.	
Duluth, Minnesota	29.65	753.1	30.39	771.9	20	— 6.7	70	NW	9	4.0	.....	0	5s	.....	W	0.01	0.3	Fair	
Eagle Pass, Texas	29.52	749.8	30.29	769.4	48	8.9	86	N	16	7.2	.....	.....	10n	.....	N	0.36	9.1	Light rain	
Eastport, Maine	30.16	766.1	30.23	767.8	46	7.8	84	SE	4	1.8	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	66	18.6	79	N	.....	.....	6	.....	10s	.....	N	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	60	15.6	44	W	4*	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.32	744.7	30.04	763.0	46	7.8	100	NW	9	4.0	.....	.....	10n	.....	Calm	0.37	9.4	Light rain	
Escanaba, Michigan	29.56	750.8	30.24	768.1	28	— 2.2	77	NW	10	4.5	.....	.....	10s	.....	NW	0	0	Cloudy	
Florence, Arizona	28.57	725.7	30.17	766.3	39	3.9	46	Calm	.....	.....	0	0*	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.76	654.3	29.82	757.4	34	1.1	43	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.43	645.9	30.39	771.9	41	5.0	56	NE	8	3.6	.....	.....	10ks	.....	NE	0	0	Cloudy	
Fort Gibson, Indian Ter	29.98	761.5	30.56	776.2	32	0.0	69	N	9	4.0	.....	.....	10s	.....	N	0.02	0.5	Cloudy	
Fort Griffin, Texas	29.22	742.2	30.58	776.7	36	2.2	53	N	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fort McKavett, Texas	28.15	715.0	30.18	766.6	38	3.3	72	NE	13	5.8	.....	.....	10s	.....	NE	0.75	19.1	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.31	744.5	30.53	775.4	26	— 3.3	88	N	10	4.5	.....	0	5s	.....	Calm	0	0	Fair	
Fredericksburg, Texas	28.59	726.2	30.22	767.6	45	7.2	61	N	12	5.4	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	30.16	766.1	30.20	767.1	59	15.0	95	N	28	12.5	.....	.....	10s	.....	N	3.13	79.5	Cloudy	
Graham, Texas	29.38	746.2	30.52	775.2	35	1.7	70	N	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Grand Haven, Michigan	29.53	750.0	30.20	767.1	35	1.7	90	E	3	1.3	.....	.....	10n	.....	Calm	0.02	0.5	Light snow	
Indianapolis, Indiana	29.48	748.8	30.29	769.4	37	2.8	90	NW	6	2.7	.....	.....	10s	.....	NW	0.53	13.5	Threatening	
Indianola, Texas	30.19	766.8	30.21	767.3	57	13.9	75	N	39	17.4	.....	.....	10s	.....	N	0.06	1.5	Cloudy	
Jacksboro, Texas	29.33	745.0	30.54	775.7	34	1.1	70	N	14	6.3	.....	.....	10s	.....	W	0	0	Cloudy	
Jacksonville, Florida	30.19	766.8	30.22	767.6	67	19.4	89	Calm	0	0	.....	8k	0	E	.....	0	0	Cloudy	
Keokuk, Iowa	29.81	757.2	30.48	774.2	27	— 2.8	64	NW	7	3.1	.....	0	0	.....	.....	0.05	1.3	Clear	
Key West, Florida	30.04	763.0	30.08	764.0	74	23.3	76	NE	15	6.7	.....	5cs	1ks	W	Calm	0	0	Fair	
Kittyhawk, North Carolina	30.24	768.1	30.26	768.6	56	13.3	94	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	
Knoxville, Tennessee	29.18	741.2	30.19	766.8	54	12.2	93	Calm	0	0	.....	9cs	Fg;smk	W	.....	0	0	Cloudy	
La Crosse, Wisconsin	29.59	751.6	30.37	771.4	29	— 1.7	88	NW	5	2.2	.....	.....	10n	.....	.....	0.01	0.3	Light snow	
La Mesilla, New Mexico	26.38	670.0	30.53	775.4	42	5.6	49	NE	1	0.4	.....	5ck	0	SW	.....	0	0	Fair	
Laredo, Texas	29.79	756.7	30.14	765.5	59	15.0	65	N	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Lead City, Dakota	24.86	631.4	30.13	765 3	21	— 6.1	86	NW	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Leavenworth, Kansas	29.65	753.1	30.59	777.0	20	— 6.7	70	NW	2	0.9	.....	0	0	.....	.....	0.05	1.3	Clear	
Los Angeles, California	29.70	754.4	30.04	763.0	46	7.8	62	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.73	755.1	30.31	769.9	41	5.0	74	NW	12	5.4	.....	.....	10s	.....	NW	0.14	3.6	Cloudy	
Lynchburg, Virginia	29.50	749.3	30.20	767.1	49	9.4	77	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Madison, Wisconsin	29.27	743.4	30.31	769.9	29	— 1.7	78	NW	14	6.3	.....	.....	10ks	.....	NW	0.20	5.1	Cloudy	
Marquette, Michigan	29.49	749.0	30.23	767.8	30	— 1.1	100	W	12	5.4	.....	.....	10n	.....	Calm	0.02	0.5	Light snow	
Mason, Texas	28.71	729.2	30.54	775.7	41	5.0	65	NE	14	6.3	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.50	749.3	30.27	768.8	32	0.0	89	NW	10	4.5	.....	.....	10n	.....	Calm	0.08	2.0	Heavy snow	
Mobile, Alabama	30.17	766.3	30.22	767.6	63	17.2	94	S	3	1.3	.....	5ck	0	SW	.....	0	0	Fair	
Montgomery, Alabama	29.98	761.5	30.22	767.6	60	15.6	70	SE	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Morgantown, West Virginia	29.02	737.1	30.05	763.3	60	15.6	71	SW	8	3.6	.....	.....	10s	.....	S	0	0	Cloudy	
Mt. Washington, N. H.	23.86	606.0	30.22	767.6	38	3.3	80	W	33	14.8	.....	5s	5ks	Calm	W	0	0	Fair	
Nashville, Tennessee	29.80	756.9	30.36	771.1	45	7.2	92	W	5	2.2	.....	.....	10n	.....	W	0.26	6.6	Light rain	
New Haven, Connecticut	30.11	764.8	30.22	767.6	57	13.9	75	S	8	3.6	.....	0	8s	.....	S	0	0	Cloudy	
New London, Connecticut	30.21	767.3	30.26	768.6	55	12.8	87	S	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
New Orleans, Louisiana	30.11	764.8	30.16	766.1	68	20.0	79	N	4	1.8	.....	5ck	2ks	NE	NE	0	0	Fair	
Newport, Rhode Island	30.20	767.1	30.25	768.3	56	13.3	69	S	4	1.8	.....	.....	10ks	.....	SW	0	0	Cloudy	
New York, New York	30.06	763.5	30.24	768.1	53	11.7	86	S	7	3.1	.....	.....	10s	.....	SW	0	0	Cloudy	
Norfolk, Virginia	30.20	767.1	30.26	768.6	51	10.6	93	S	3	1.8	.....	.....	Fog	.....	.....	0	0	Foggy	
North Platte, Nebraska	27.39	695.7	30.23	767.8	12	—11.1	80	W	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Olympia, Washington Ter.	30.37	771.4	30.41	772.4	30.2	— 1.0	100	S	3	1.3	.....	0	0.	.....	.....	0	0	Clear	
Omaha, Nebraska	29.29	744.0	30.49	774.4	20	— 6.7	85	W	5	2.2	.....	5k	0	NW	.....	0.13	3.3	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	BAROMETER. Correcte for instrum'tal error and temperature. Inches.	BAROMETER. Correcte for instrum'tal error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Oswego, New York	29.66	753.4	29.97	761.2	55	12.8	81	S	4	1.8	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Pembina, Dakota	29.52	749.8	30.42	772.7	15	— 9.4	82	W	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.16	766.1	30.21	767.3	54	12.1	87	S	5	2.2	.....	1c	0	Calm	.....	0	0	Clear	
Phœnix, Arizona	28.92	734.6	.....	.....	49	9.4	31	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.74	449.7	29.95	760.7	— 2	—18.9	35	N	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.30	617.2	30.07	763.8	28	— 2.2	43	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.04	763.0	59	15.0	70	W	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Port Huron, Michigan	29.40	746.7	30.08	764.0	40	4.4	91	N	6	2.7	.....	.....	10n	.....	N	1.08	27.4	Light rain	
Portland, Maine	30.16	766.1	30.21	767.3	53	11.7	86	S	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Portland, Oregon	30.33	770.4	30.45	773.4	37.0	2.8	85	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.93	633.2	30.29	769.4	23	— 5.0	60	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.31	744.5	30.15	765.8	53	11.7	61	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.14	765.5	30.16	766.1	68	20.0	79	NE	8	3.6	.....	2ck	0	SW	.....	0	0	Clear	
Red Bluff, California	29.81	757.2	30.18	766.6	52	11.1	23	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	30.00	762.0	30.22	767.6	62	16.7	77	N	.....	.....	4	.....	10s	.....	NE	0.15	3.8	Cloudy	
Rochester, New York	29.82	744.7	29.92	760.0	52	11.1	86	S	4	1.8	.....	.....	10s;fg	SW;Calm	Calm	0.08	2.0	Cloudy	
Roseburg, Oregon	29.81	757.2	30.42	772.7	29.0	— 1.7	94	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	30.06	763.5	30.14	765.5	47	8.3	48	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.86	758.4	30.47	773.7	33	0.6	89	W	14	6.3	.....	.....	10s	.....	.....	0.76	19.3	Cloudy	
St. Marks, Florida	30.21	767.3	30.22	767.6	56	13.3	94	NE	8	1.3	.....	2ck	Fog	W	Calm	0	0	Clear	
St. Paul, Minnesota	29.50	749 3	30.40	772.1	20	— 6.7	70	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Salt Lake City, Utah	25.99	660.1	30.32	770.1	25	— 3.9	75	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.90	751.8	30.20	767.1	51	10.6	59	NE	12	5.4	.....	.....	10s	.....	NE	0.17	4.3	Cloudy	
San Diego, California	29.97	761.2	30.04	763.0	53	11.7	93	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.49	749.0	30.18	766.6	41	5.0	91	W	14	6.3	.....	.....	10n	.....	W	0.97	24.6	Light rain	
Sandy Hook, New Jersey	30.18	766.6	30.22	767.6	57	13.9	81	S	11	4.9	.....	10c	0	W	.....	0	0	Cloudy	
San Francisco, California	30.07	763.8	30.13	765.3	58	14.4	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	20	— 6.7	56	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.16	766.1	30.25	768.3	56	13.3	94	NW	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	30.16	766.1	30.38	771.6	49	9.4	78	N	12	5.4	.....	.....	10s	.....	N	0.22	5.6	Cloudy	
Silver City, New Mexico	24.40	619.8	.....	.....	35	1.7	52	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.24	768.1	30.28	769.1	58	14.4	100	N	4	1.8	.....	1cs	0	S	.....	0	0	Clear	
Springfield, Massachusetts	30.07	763.8	30.20	767.1	52	11.1	86	S	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	
Stockton, Texas	27.33	694.2	30.33	770.4	37	2.8	62	NW	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Thatcher's Island, Mass	30.20	767.1	30.25	768.3	51	10.6	93	S	14	6 3	.....	.....	10s	.....	SW	0	0	Cloudy	
Toledo, Ohio	29.46	748.3	30.15	765.8	40	4.4	91	SW	8	3.6	.....	.....	10s	.....	SW	0.95	24.1	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	61	16.1	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.22	767.6	30.25	768.3	64	17.8	89	NE	6	2.7	.....	0	Fog	.....	NE	0	0	Fair	
Umatilla, Oregon	30.10	764.5	.....	.....	29.0	— 1.7	78	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	34	1.1	100	SE	.....	.....	2	.....	10s	.....	SW	0	0	Cloudy	
Uvalde, Texas	29.43	747.5	30.26	768.6	49	9.4	64	N	10	4.5	.....	.....	10s	.....	N	0.49	12.4	Cloudy	
Vicksburg, Mississippi	30.05	763.3	30.32	770.1	54	12.2	87	NE	12	5.4	.....	.....	10n	.....	NE	0.13	3.3	Light rain	
Virginia City, Montana	24.46	621.3	29.94	760.5	26	— 3.3	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.80	756.9	30.18	766.6	42	5.6	83	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.07	763.8	30.19	766.8	54	12.2	93	S	7	3.1	.....	.....	10ks	.....	S	0	0	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	41	5.0	56	N	.....	.....	2	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.18	766.6	30.26	768.6	55	12.8	93	Calm	0	0	.....	2c	Fog	Calm	Calm	0	0	Fair	
Winnemucca, Nevada	25.98	659.9	30.34	770.6	24	— 4.4	61	E	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.22	767.6	30.28	769.1	56	13.3	68	S	4	1.8	.....	.....	10s	.....	SE	0	0	Threatening	
Yankton, Dakota	29.98	758.6	30.50	774.7	16	— 8.9	74	SE	3	1.3	.....	0	8s	.....	W	Inap.	Inap.	Fair	
Yuma, Arizona	29.92	760.0	30.08	764.0	60	15.6	20	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	30.30	769.6	30.35	770.9	7.5	—13.6	100	NW	8	3.6	.....	.....	10n	.....	NW	0.01	0.3	Snowing	J. Fortescue, W. Wood.
Havana, Cuba, W. I.	30.03	762.7	30.05	763.3	75	23.9	72	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	83	NE	5	2.2	.....	2c	5ks	E	.....	0	0	Clear?	G. O. Gellich.
Kingston, Jamaica, W. I.	30.04	763.0	30.05	763.3	78	25.6	95	Calm	0	0	.....	8c?	5n?	Calm	NE	0.86	21.8	Fair	James Gall.
Navassa, W. I.	29.81	757.2	29.89	759.2	81	27.2	.....	NE	13.5	6.0	.....	.....	.....	.....	.....	0.07	1.8	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.93	760.2	29.94	760.5	84	28.9	79	E	.....	.....	3	5k	5ks	E	.....	0	0	½ cloudy?	C. J. Hering
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	65.5	18.6	85	Calm	0	0	.....	.....	8s;ks	.....	.....	0.15	3.8	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.78	755.1	30.04	763.0	76	24.4	85	W	.....	.....	.....	k	k	.....	.....	.....	.....	Squally	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft.. or 406.3 (?) m.; Boise City, 2,669 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,833 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066,8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,067.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft,. or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,890 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m: Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.30 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.35	770.9	66	18.9	66	18.9	92	NE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Navy Yard, Portsmouth, N.H	30.15‡	765.8‡	.....	.....	50	10.0	93	S	2	0.9	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Naval Hospital, Yokohama, Japan	30.01*	762.2*	66	18.9	59.9	15.5	88	Calm	.....	.....	0	.....	0	.....	.....	0.29	7.4	.....	.....	Clear.....	
Adams. Valparaiso, Chili	29.91	759.7	60	15.6	58	14.4	100	N	.....	.....	2	.....	1	.....	N;E	.....	.....	Smooth	.....	Fair	
Alaska, S. 8° 14′, W. 80° 21′	30.08	764.0	67	19.4	65	18.3	78	SE	.....	.....	3	.....	10	.....	SE	0	0	Smooth	.....	D. clouds....	
Alliance, Smyrna, Turkey	30.01‡	762.2‡	.....	.....	71	21.7	62	W	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan	30.00	762.0	70	21.1	68	20.0	79	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	.....	Clear.....	
Canonicus, New Orleans, La	30.10	764.5	50	10.0	67	19.4	89	N	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	Fair	
Colorado. New York, N. Y	30.23‡	767.8‡	.....	.....	55	12.8	100	SSE	7	3.1	.....	.....	8	.....	SSE	0	0	.....	.....	Foggy	
Constitution, Havre, France	.....	.....	.....	.....	50	10.0	100	N	.....	.....	1	.....	9	.....	N	.....	.....	.....	.....	Cloudy.....	
Despatch, Constantinople, Turkey	30.01‡	762.2‡	.....	.....	69	20.6	65	SE	.....	.....	1	.....	5	.....	S	.....	.....	.....	.....	Fair.....	
Essex, Cape Town	29.85	758.2	65	18.3	66	18.9	89	N	.....	.....	4	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
Franklin, Norfolk, Va	30.33	770.4	63	17.2	51	10.6	??	S	4.8	2.1	.....	.....	2	.....	Calm	0	0	.....	.....	Fair	
Gettysburg Jaffa, Syria	29.89‡	759.2‡	.....	.....	76	24.4	68	WSW	.....	.....	3	.....	2	.....	N	0	0	Smooth	.....	D. clouds.....	
Guard. N 15° 39′, W. 49° 00′	29.96	761.0	84	28.9	83	28.3	79	SE	.....	.....	3	.....	2	.....	SE	.....	.....	Smooth	.....	Clear.....	
Hartford, St. Catherine Strait	30.11	764.8	72	22.2	66	18.9	45	NNW	2.4	1.1	.....	.....	2	.....	W	0	0	Smooth	.....	Clear.....	
Marion, N. 39° 09′, E. 15° 02′	29.96	761.0	75	23.9	76	24.4	77	W	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	
Michigan, Erie, Pa	30.01†	762.2†	.....	.....	46	7.8	100	NNW	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Drizzling....	
Monocacy, Yokohama, Japan	30.00‡	762.0‡	.....	.....	62	16.7	88	WNW	.....	.....	0–1	.....	1	.....	WNW	.....	.....	.....	.....	Clear.....	
New Hampshire, Port Royal, S. C	30.43	772.9	70	21.1	62	16.7	71	NE	7	3.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Onward, Callao, Peru	30.06†	763.5†	.....	.....	63	17.2	89	SSE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China	29.96	761.0	55	12.8	44	6.7	92	NW	.....	.....	1	.....	8	.....	NW	.....	.....	.....	.....	Cloudy.....	
Passaic, Washington, D. C	.....	.....	.....	.....	55	12.8	100	SW	.....	.....	2	.....	2	.....	N	.....	.....	.....	.....	Clear	
Plymouth. Santa Cruz, W. I	30.02	762.5	83	28.3	84	28.9	83	NE	.....	.....	2	.....	2	.....	N;E	.....	.....	Smooth	.....	Fair.....	
Powhatan, New York, N. Y	30.22‡	767.6‡	.....	.....	57	13.9	87	SSW	4.8	2.1	.....	.....	8	.....	.....	0	0	.....	.....	Clear?.....	
Quinnebaug, Norfolk, Va	30.26‡	768.6‡	.....	.....	50	10.0	93	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Foggy	
Ranger. Hong-Kong, China	30.09	764.3	83	28.3	82	27.8	83	Calm	.....	.....	0	.....	2	.....	Calm	.....	.....	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas	30.05	763.3	55	12.8	55	12.8	87	NW	.....	.....	4–5	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Santee, Annapolis, Md	30.15‡	765.8‡	.....	.....	59	15.0	82	S	.....	.....	1	.....	5	.....	.....	0	0	.....	.....	Hazy.....	
Saratoga, Philadelphia, Pa	30.20	767.1	.....	.....	53	11.7	93	S	.....	.....	3	.....	6	.....	S	0	0	.....	.....	Cloudy.....	
St. Louis, League Island, Pa	30.11	764.8	58	14.4	54	12.2	93	S	4	1.8	.....	.....	8	.....	SW	0	0	.....	.....	Cloudy.....	
Supply, Havre, France	29.53	750.0	54	12.2	53	11.7	80	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Trenton, Villafranca, France	29.76‡	755.9‡	.....	.....	65	18.3	84	ESE	.....	.....	2	.....	10	.....	S;E	0.5	13.	.....	.....	Overcast.....	
Vandalia, Villafranca, France	29.74‡	755.4‡	.....	.....	66	18.9	79	N	.....	.....	1	.....	5	.....	N	.....	.....	.....	.....	Fair.....	
Wabash, Boston, Mass	.....	.....	.....	.....	52	11.1	100	SE	5	2.2	.....	.....	5?	.....	.....	0	0	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 26° 04′, E. 120° 55′		30.01*	762.2*	75	23.9	90	NNE			2		0				Rough	NE	Blue sky	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T.		30.40*	772.1*	39	3.9	91	Calm			0		0			0			Clear	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic, N. 51° 32′, W. 11° 40′		30.00†	762.0†	53	11.7		N			5		2ck		NNE	0	High	NNW	Fair	Capt. W. H. Thompson.
S. S. Celtic, N. 41° 18′, W. 58° 40′		29.82*	757.4*	62	16.7	??	NNE			6				NE	0	Heavy	NNE	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known. †Aneroid.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 34° 53′, W. 135° 41′		30.09	764.3	65	18.3	73	NE			3		n		NE	0	Mod'ate	SE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 34′, W. 23° 0′		30.10	764.5	57.5	14.2	58	WNW			3		2		NNE	0	4	NNE	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.			CHARACTER.	DIRECTION FROM—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 40° 36′, W. 59° 53′		30.05*	763.3*	60	15.6	94	NE			7		9		ENE	Light	Sharp	ENE	Cloudy	Captain Sargent.
S. S. Ohio, N. 51° 34′, W. 28° 17′ 30″		30.26	768.6	53	11.7	86	W			1		9?		W		Small	NNW	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland, N. 39° 53′ W. 71° 40′		30.23*	767.8*				SE	6	2.7			1		W		Smooth		Fine	Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

*Aneroid; regulated to standard at Antwerp.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 14° 42′, W. 71° 54′		29.81	757.2	86	30.0	76	ENE	12	5.4			5k		E	0	Swell	NE	D. clouds	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 28, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	29.94	760.5	67.3	19.6	77	NW	.....	.....	1	.....	7	.....	.....	0.193	4.9	Very cloudy	Kesxuche.
Algiers	.....	.....	29.89	759.1	70.9	21.6	77	W	.....	.....	8	.....	10	.....	.....	1.000	25.4	Covered	Tourilière.
La Calle	.....	.....	29.87	758.8	75.9	24.4	75	NNW	.....	.....	1	.....	6	.....	.....	0	0	Cloudy.....	Foufrede.
Tunis	.....	.....	29.82	757.5	83.7	28.7	35	NW	.....	.....	3	.....	4	.....	.....	0	0	Cloudy.....	Jacques.
Sfax	.....	.....	29.96	761.0	80.6	27.0	.....	W	.....	.....	5	.....	4	.....	.....	0	0	Cloudy.....	Gau.
Saida	.....	.....	29.92	759.9	68.0	20.0	47	W	.....	.....	1	.....	4	.....	.....	0	0	Cloudy.....	Herbin.
Tebessa	.....	.....	29.85	758.2	77.9	25.5	34	WSW	.....	.....	4	.....	4	.....	.....	0	0	Cloudy.....	Watrin.
Geriville	.....	.....	29.91	759.6	63.0	17.2	59	N	.....	.....	6	.....	8	.....	.....	0	0	Very cloudy	Brugniaux.
Laghouat	.....	.....	29.91	759.7	78.1	25.6	31	NNE	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Bertrand.
Biskra	.....	.....	29.89	759.3	79.7	26.5	42	E	.....	.....	5	.....	2	.....	.....	0	0	Fair.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890† meters, or 2,919.9† feet; Tebessa, 1,088† m., or 3,569.4† ft.; Geriville, 1,360† m., or 4,461.7† ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.07	738.4	29.60	751.8	69.3	20.7	65	SW	.....	.....	3	.....	10	.....	.....	1.181	30.0	.....	Prof. Ivan Stoïr.
Cracow, I. R. Observatory	28.87	733.4	29.63	752.6	55.8	13.2	89	W	.....	.....	1	.....	10	.....	.....	0.587	14.9	.....	Dr. Wierzbicki
Eperies	28.81	731.7	29.66	753.4	62.6	17.0	78	S	.....	.....	3	.....	8cks	.....	N	0.406	10.30	.....	Julius Mikolla.
Gratz	28.40	721.4	29.64	752.9	52.0	11.1	90	NW	.....	.....	5	.....	10	.....	.....	0.008	0.20	.....	Andreas Rospini.
Hermannstadt	28.33	719.6	29.76	755.8	70.5	21.4	50	SW	.....	.....	4	.....	4	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.44	722.3	29.80	756.8	43.5	6.4	91	WSW	.....	.....	3	.....	10	.....	.....	0.394	10.0	.....	Prof. C. Wagner.
Lemberg	28.72	729.4	29.67	753.6	66.6	19.2	60	S	.....	.....	2	.....	6	.....	.....	0	0	.....	Dr. T. Stanecki.
Pola	29.55	750.6	29.66	753.4	62.4	16.9	96	S	.....	.....	3	.....	10s	.....	.....	0.488	12.4	Thunder-storm	I.R.Hydrographic Office
Szathmar	29.31	744.5	29.76	755.9	68.7	20.4	66	SE	.....	.....	3	.....	8	.....	.....	0	0	.....	Julius Csics, S. J.
Szegedin	29.41	747.1	29.68	753.9	70.5	21.4	57	S	.....	.....	4	.....	10	.....	.....	0	0	.....	Karl Stancel.
Trieste	29.58	751.3	29.68	753.9	61.9	16.6	92	SW	.....	.....	1	.....	10	.....	.....	0.874	22.2	Raining	P. Busin.
Vienna	29.02	737.0	29.73	755.2	47.5	8.6	91	W	.....	.....	4	.....	10	.....	.....	0	0	.....	I.R. Central Met. Ob's'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.3 m., or 1,337.0 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45 p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.177	4.5	.....	Prof. M. Passau.
Brussels	29.51	749.5	29.71	754.6	51.4	10.8	76	SW	.....	.....	3	.....	.....	.....	.....	0.098	2.50	.....	Royal Observatory
Furnes	29.69	754.1	29.71	754.7	52.0	11.1	67	WSW	.....	.....	4	.....	7	.....	.....	0.043	1.1	.....	M. E. de Cae
Maeseyck	29.58	751.3	29.71	754.6	51.8	11.0	77	SW	.....	.....	4	.....	6	.....	.....	0.063	1.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.28	743.7	29.38	746.2	43.5	6.4	.....	NW	24	10.7	.....	.....	3	.....	.....	0.220	5.59	Blue sky.....	W. Boswell.
Ardrossan	29.44	747.8	29.46	748.3	46	7.8	.....	NW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds.....	George Carrick.
Armagh, Observatory	.....	.....	29.74	755.4	46.5	8.1	.....	WNW	20	8.9	.....	.....	6	.....	.....	.....	.....	Squally.....	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.57	751.1	48.6	9.2	.....	W	46	20.6	.....	.....	10	.....	.....	.....	.....	Overcast.....	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.11	739.4	29.51	749.5	42.1	5.6	.....	NW	.....	.....	6	.....	10	.....	.....	0.18	4.6	Overcast.....	J. McLandsborough.
Bridgetown, (Barbados)	29.88	758.9	29.91	759.7	84	28.9	.....	NE	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds.....	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.66	753.4	50.0	10.0	.....	W	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds.....	H. Todd. [H. C.
Cardington	.....	.....	29.69	754.1	48.0	8.9	.....	NW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	John McLaren.
Chatham, School M. E.	29.68	751.3	29.71	754.6	50.2	10.1	.....	W	.....	.....	2	.....	5	.....	.....	.....	.....	Blue sky.....	Lt. G. W. Morris, R. E.
Dartmoor	28.36	720.5	29.86	758.4	40.4	4.7	.....	NW	.....	.....	5	.....	5	.....	.....	.....	.....	Showery.....	Alexander Watt.
Donaghadee	29.57	751.1	29.60	751.8	48	8.9	.....	NW	.....	.....	7	.....	7	.....	.....	.....	.....	D. clouds.....	J. Mac Gowan.
Dover	29.68	753.9	29.70	754.4	50	10.0	.....	W	.....	.....	4	.....	2	.....	.....	.....	.....	¾ clouded...	J. Costello.
Falmouth, Observatory	29.70	754.4	29.93	760.2	50.7	10.4	.....	NNW	.....	.....	4	.....	7	.....	.....	.....	.....	Overcast.....	The Staff.
Fort Napier, (Natal)	27.16	689.8	29.48	748.5	82.0	27.8	.....	NW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast.....	Pvt. G. Salmon, A. H. C.
Free Town, (Sierra Leone)	29.66	753.4	29.69	759.2	87	30.6	.....	W	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds.....	
Galway, Queen's College	.....	.....	29.91	759.7	50	10.0	.....	NW	.....	.....	3	.....	5	.....	.....	.....	.....	D. clouds.....	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.79	756.7	29.84	757.9	.....	.....	.....	S	.....	.....	2	.....	4	.....	.....	.....	.....	Gloomy	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.24	742.7	29.44	747.8	45.0	7.2	.....	WNW	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds.....	D. G. Maclean.
Great Yarmouth	29.58	751.3	29.58	751.3	47	8.3	.....	W	.....	.....	4	.....	6	.....	.....	.....	.....	Misty.....	G. T. Watson.
Greenwich, Royal Obs'y	29.53	750.0	29.70	754.4	51.0	10.6	.....	WNW	.....	.....	2	.....	6	.....	.....	.....	.....	D. clouds.....	The Staff, for G. B. Airy.
Guernsey	29.66	753.4	29.88	758.9	51	10.6	.....	NW	.....	.....	5	.....	8	.....	.....	.....	.....	Squally.....	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	29.93	760.2	49	9.4	.....	W	.....	.....	2	.....	c	.....	.....	0.14	3.6	Fine	M. P. Moyle.
Holyhead	29.62	752.3	29.68	753.9	50	10.0	.....	WNW	.....	.....	7	.....	8	.....	.....	.....	.....	D. clouds.....	John Tilston.
Jersey	29.61	752.1	29.90	759.4	54.0	12.2	.....	WNW	.....	.....	5	.....	8	.....	.....	.....	.....	Showery.....	J. Fisher.
Kew, Observatory	29.63	753.9	29.72	754.9	50.2	10.1	.....	W	17	7.6	.....	.....	8	.....	.....	.....	.....	Threatening	The Staff.
Kingstown	29.76	755.9	29.79	756.7	49	9.4	.....	WNW	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds.....	George Mitchell.
Leicester, Museum	.....	.....	29.66	753.4	45.9	7.7	.....	NW	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds.....	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.81	756.9	29.88	758.9	80	26.7	.....	SSE	.....	.....	4	.....	1cs	.....	.....	.....	.....	D. clouds.....	Sergt. Beckett.
Nairn	29.32	744.7	29.42	747.3	45	7.2	.....	NW	.....	.....	3	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.03	762.7	78.2	25.7	.....	NE	.....	.....	1	.....	4	.....	.....	.....	.....	D. clouds.....	C. S. Duncombe.
Nottingham, Observatory	29.43	747.5	29.62	752.3	47.2	8.4	.....	WNW	.....	.....	5	.....	10k;d	.....	W	0.224	5.69	Raining	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.14	740.1	29.66	753.4	47.8	8.8	.....	W	.....	.....	6	.....	6	.....	.....	.....	.....	D. clouds.....	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.72	754.9	48	8.9	.....	W	.....	.....	5	.....	10	.....	.....	.....	.....	Raining.....	H.E. Bellamy.
Plymouth	29.79	756.7	29.87	758.7	51.6	10.9	.....	NW	.....	.....	4	.....	5	.....	.....	.....	.....	D. clouds.....	John Merrifield.
Roche's Point	29.93	760.2	29.97	761.2	51	10.6	.....	NNW	.....	.....	6	.....	5	.....	.....	.....	.....	Squally.....	W. Kennedy.
Saint Ann's Head	29.70	754.4	29.86	758.4	54	12.2	.....	WNW	.....	.....	5	.....	4	.....	.....	.....	.....	Squally.....	John C. Walker.
Sandwick Manse, (Orkneys)	.....	.....	29.40	746.7	41.2	5.1	.....	NE	20	8.9	.....	.....	10	.....	.....	.....	.....	Showery.....	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.96	761.0	70.0	21.1	.....	SW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky.....	Sergt. W. H. Lyne.
Sheffield	29.28	743.7	29.56	750.8	44.1	6.7	.....	W	.....	.....	6	.....	10	.....	.....	0.21	5.3	Raining	W. F. Cooper.
Silloth, Rectory	29.42	747.3	29.45	748.0	44.5	6.9	91	NW	.....	.....	6	.....	8	.....	.....	0.075	1.91	D. clouds.....	C. Edith Redford.
Stonyhurst Observatory	29.13	739.9	29.53	750.0	42.4	5.8	.....	W	.....	.....	4	.....	10	.....	.....	.....	.....	Heavy rain..	Rev. S. J. Perry.
Strathfeld Turgiss	29.53	750.0	29.74	755.4	50.8	10.4	.....	W	.....	.....	2-3	.....	5	.....	.....	.....	.....	D. clouds.....	Rev. C. H. Grattan, F.M.S
Thurso	29.32	744.7	29.36	746.2	45	7.2	.....	NNW	.....	.....	5	.....	10	.....	.....	.....	.....	Showery	John Trotter.
Truro, Royal Institution	.....	.....	29.93	760.2	53	11.7	.....	NW	.....	.....	7	.....	4	.....	.....	.....	.....	D. clouds.....	W. Newcombe.
Valencia, Observatory	30.05	763.3	30.07	763.8	51.6	10.9	.....	NNW	30	13.4	.....	.....	6	.....	.....	Blank	Blank	D. clouds.....	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)	.....	.....	29.47	748.5	57.0	13.9	88	NW	.....	.....	2	.....	9kn	.....	.....	0.01	0.3	Cloudy	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.6	78.5	25.8	58	E	21.0	9.4	.....	1	4	.....	ESE	0	0	Squally.....	C. Meldrum.
Melbourne, Observatory	29.66	753.3	29.75	755.6	59.0	15.0	85	SW	2	0.9	.....	.....	8	.....	.....	0.73	18.5	Heavy showers.	R. L. J. Ellery.
Monach L't-house, (Hebrides)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 35', W. 44° 25'	7	.....	Drizzling.....	Capt. Alex. Wilson.
Barque Commewyne, N. 30° 15', W. 43° 20'	4	SW	D. clouds.....	Capt. A. Buchan.
S. S. Gordon Castle, N. 44° 50', W. 42° 25'	3	ESE	Squally.....	Capt. W. Waring.
Barque Margaret Smith	.....	.....	.....	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.17	664.7	29.89	759.2	67.6	19.8	96	SE	.....	.....	2	.....	6cs	.....	.....	Inap.	Inap.	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.38	746.2	29.43	747.4	52.2	11.2	75	NW	.....	.....	2	.....	5	.....	.....	.....	.....	.....	
Faröe	29.44	747.7	29.46	748.2	49.1	9.5	87	W	.....	.....	4	.....	5	.....	.....	.....	.....	.....	
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stykkisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Thorshavn, (Faröe)	29.72	754.8	29.75	755.7	40.8	4.9	50	NNE	.....	.....	4	.....	3	.....	.....	.....	.....	.....	
Vestervig	29.18	741.1	29.35	745.4	51.1	10.6	91	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.40	746.7	29.95	760.7	49.6	9.8	76	NW	.....	.....	3	.....	5	.....	NW	0.051	1.3	Cloudy	Collignon, Director.
Amiens, Normal School	29.67	753.6	29.78	756.4	49.6	9.8	84	SW	.....	.....	2	.....	8	.....	NE	0.260	6.6	Very cloudy	Bonvallet, Director.
Avignon, Normal School	29.82	757.5	29.90	759.5	57.2	14	47	NNW	.....	.....	3	.....	0	.....	.....	0.094	2.4	Very clear	M. Giraud, Director.
Bar-sur-Seine	29.32	744.7	29.88	758.9	51.6	10.9	60	WSW	.....	.....	2	.....	8kn	.....	W	0.287	7.3	Very cloudy	C. Saillard.
Beauvais, Normal School	29.57	751.0	29.85	758.3	49.8	9.9	80	W	.....	.....	2	.....	10	.....	W	0.16	4.	Covered	Frere Eugene Marie, Director.
Besançon, Normal School	29.04	737.6	29.95	760.6	46.8	8.2	83	S	.....	.....	2	.....	10	.....	SW	0.83	21.	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	29.13	739.9	30.04	763.1	48.0	8.9	81	W	.....	.....	1	.....	10kn	.....	NW	0.63	16.	Covered	M. Marlot, Director.
Bourges, Normal School	29.39	746.5	29.95	760.6	51.8	11.0	93	SW	.....	.....	2	.....	2k	.....	SW	0.244	6.20	Slightly cl'dy	A. Waquet, Director.
Brest, Naval Observatory	29.70	754.3	29.94	760.5	57.2	14.0	64	NW	.....	.....	3	.....	7	.....	NW	0.069	1.75	Squally	M.de Rermaur, Director.
Carcassonne, Normal School	29.58	751.4	30.11	764.9	57.6	14.2	58	W	.....	.....	3	.....	2	.....	W	0.04	1.	Slightly cl'dy	Septembre, Director.
Caen	29.81	757.1	29.88	759.0	53.2	11.8	70	NW	.....	.....	2	.....	1	.....	W	0.20	5.	Clear	M. Lair, Director.
Chartres, Normal School	29.28	743.8	29.85	758.1	53.6	12	97	SW	.....	.....	2	.....	4	.....	SE	0.28	7.	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.54	750.2	29.83	757.6	49.5	9.7	92	SW	.....	.....	2	.....	8cn	.....	SW	0.433	11.0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.60	726.3	29.95	760.6	53.6	12.0	64	W	.....	.....	1	.....	5	.....	WNW	0.055	1.4	Cloudy	Alluard, Director.
Commercy, Normal School	29.02	737.0	29.86	758.4	46.6	8.1	86	NW	.....	.....	1	.....	10n	.....	NW	0.154	3.9	Rain & hail	Dr. Coulet, Director.
Commune de Grèasque*	28.72	729.4	29.86	758.4	52.0	11.1	75	NW	.....	.....	6	.....	2	NW	.....	0.020	0.5	¾ Covered	M. Klun.
Grenoble, Normal School	29.12	739.6	29.89	759.3	49.6	9.8	92	NW	.....	.....	4	.....	10kn	.....	N	0.285	7.25	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.81	757.2	30.03	762.8	55.0	12.8	68	NE	.....	.....	3	.....	5	.....	NNW	0	0	.....	Mouillot, Director.
Le Mans, Normal School	29.62	752.4	29.93	760.2	52.9	11.6	59	NW	.....	.....	2	.....	8	.....	WNW	0.011	0.25	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.04	737.7	29.97	761.3	46.0	7.8	86	SW	.....	.....	3	.....	10	.....	W	1.126	28.60	Covered	Baudry, Director.
Lorient, Naval Observatory	29.91	759.6	30.00	762.1	53.2	11.8	69	NW	.....	.....	2	.....	.....	.....	NW	0.016	0.4	.....	Lt T. Carré, Director.
Mâcon, Normal School	29.97	761.1	30.00	762.0	48.2	9	80	S	.....	.....	4	.....	10	.....	.....	0	0	Covered	M. Galsin, Director.
Mirecourt, Normal School	28.84	732.6	29.89	759.2	47.5	8.6	81	S	.....	.....	3	.....	5ks	.....	E	0.51	13.	Partly cov'd	M. Barbier, Director.
Nismes, Normal School	29.72	755.0	29.93	760.2	59.0	15	47	N	.....	.....	4	.....	0	.....	.....	0.049	1.25	Clear	Boyer, Director.
Privas, Normal School	28.88	733.5	29.95	760.6	52.2	11.2	75	N	.....	.....	1	.....	10	N	N	0	0	Slightly cov	M. Cantier.
Puy de Dome (Summit)	26.07	636.7	.....	.....	30.2	— 1.0	100	NW	.....	.....	3	.....	8	.....	.....	0.118	3.0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.99	761.7	30.02	762.5	57.2	14.0	86	WNW	.....	.....	1	.....	5	NW	NW	0.12	3.	½ covered	Lt. Decante, Director.
Rouen, Normal School	29.74	755.5	29.83	757.7	51.8	11.0	74	W	.....	.....	1	.....	5	.....	W	0.126	3.2	Cloudy	Frere Lucard, Director.
Saint Malo (Port)	.....	.....	29.92	760.0	50.9	10.5	81	W	.....	.....	4	.....	8	.....	WNW	0.227	5.77	Raining	M. H. Hercouet.
Saint Maur, (near Paris)	29.99	754.2	29.86	758.4	51.4	10.8	75	W	.....	.....	1	.....	10	.....	WSW	0.031	0.8	.....	E. Renou.
Tarbes, Normal School	28.95	735.2	30.01	762.3	59.0	15	89	W	.....	.....	4	.....	10	.....	.....	0.35	9.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.28	743.6	30.00	761.9	50.0	10	93	N	.....	.....	1	.....	5	.....	NE	0	0	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.83	757.6	29.85	758.3	80.6	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	3.	.....	L'Abbé Marchès.
Lyons, Observatory	.....	.....	29.99	761.7	49.6	9.8	71	.....	.....	.....	.....	.....	7	.....	.....	0.004	0.1	.....	
Marseilles, Observatory	.....	.....	29.82	757.5	56.3	13.5	32	NW	.....	.....	4	.....	2	.....	.....	0	0	Partly cl'dy	The Staff.
Mont-Louis	24.77	629.1	30.08	764.1	41.4	5.2	43	N	.....	.....	3	.....	2	.....	SE	0.287	7.3	.....	M. Cave.
Nice	.....	.....	29.64	752.9	63.0	17.2	70	SW	.....	.....	1	.....	2	.....	.....	0.106	2.7	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.57	751.1	29.85	758.1	50.4	10.2	91	W	.....	.....	3	.....	10	.....	W	0.122	3.1	Light rain	Marié Davy, Director
Perpignan	.....	.....	29.96	761.0	59.2	15.1	44	NE	24.2	10.83	.....	.....	1	.....	NW	0	0	.....	Dr. Fines.
Pic du Midi, (Summit,) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.43	569.8	.....	.....	28.8	— 1.8	.....	N	.....	.....	1	.....	7	.....	.....	0.055	1.4	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.35	745.4	30.07	763.7	54.1	12.3	70	NW	.....	.....	3	.....	6	.....	.....	0.063	1.60	.....	B. Bailland.
Tours	29 74	755.3	29.93	760.3	53.6	12.0	78	NW	.....	.....	3	.....	8	.....	NNW	0.031	0.8	.....	C. Marquet.
Versailles	.....	.....	29.86	758.4	50.4	10.2	64	NW	.....	.....	1	.....	9	.....	.....	0.104	2.65	Showery	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.35	771.0	30.38	771.7	41.4	5.2	64	NW	8.3	3.7	.....	.....	0	.....	.....	0	0	Clear	Marie Deschevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12.	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.83	732.2	29.66	753.4	50.9	10.5	74	W			5		9	W		0.24	6.	Raining	Prof. Dr. Hoh.
Berlin	29.45	748.0	29.62	752.3	53.6	12.0	69	SW			4		8			0	0		Prof. Arndt.
Breslau	29.17	740.9	29.69	754.2	49.6	9.8	95	W			1		10			0.069	1.74		Royal University Obs'y
Carlsruhe	29.37	746.0	29.80	756.8	48.4	9.1	83	SW			2		10			0.272	6.9	Raining	Albert Senz.
Cassel	29.07	738.4	29.68	753.9	52.2	11.2	69	W			2		4	SW		0.013	0.32	Foggy	Dr. H. Möhl.
Crefeld	29.51	749.6	29.67	753.7	52.9	11.6	66	SW			5		4k			0	0		Director Lose.
Emden	29.60	751.8	29.63	752.7	50.0	10.0	75	SW			3		1			0.256	6.5		Prof. Prestel.
Frankfort on the Main	29.37	746.1	29.74	755.4	50.0	10.		SSW			2		9			0.146	3.7		Physical Society.
Friedrichshafen	28.48	722.1	29.87	758.8	47.8	8.8	79	WSW			7		10	SW		0	0		M. Wilhelm.
Hamburg	29.50	749.2	29.57	751.0	52.0	11.1	79	W			2		7ck;cu			0.110	2.8	Cloudy	Captain F. Hegemann.
Kiel	29.48	748.9	29.60	749.3	51.4	10.8	72	W			4		7			0.016	0.41		Prof. G. Karsten.
Königsberg, (Prussia)	29.47	748.6	29.56	750.7	50.5	10.3	97	SW			3		8			0.039	1.0		Prof. E Luther.
Köslin			29.50	749.4	52.0	11.1		SW			2		4			0	0		H. Müller.
Leipsic, Observatory	29.27	743.4	29.69	754.0	51.8	11.0	70	SW			4		7			0.031	0.8		Prof. Bruhns, Sec. Counsel.
Memel, Naval School	29.50	749.2	29.54	750.4	50.5	10.3	81	WSW			1		10					Raining	Reinbrecht and Skalweit.
Neufahrwasser	29 55	750.6	29.57	751.0	52.0	11.1	90	SSW			1		10			0.126	3.2		A. Lothes.
Posen	29.38	746.2	29.67	753.6	50.9	10.5	90	SW			2		10			0.028	0.7		Dr. Magener.
Strassburg (in Alsace)	29.30	744.3	29.85	758.3	51.3	10.7	76	WSW			2		8	W		0.500	12.69	Raining	Imp. Astronomical Observatory
Stuttgart	28.82	732.0	29.76	755.9	50.0	10.0	56	W			1		9	W		0.028	0.7	Light rain	Prof. Schoder.
Treves, (Trier)	29.23	742.4	29.74	755.5	51.1	10.6	75	W			3		10			0.142	3.61	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.27	718.1	29.75	755.6	46.8	8.2	78	W	2.7	1.2			9ck		W	0.339	8.6		Dr. Von Bebber.
Wustrow, Naval School	29.49	749.0	29.51	749.6	50.7	10.4	89	SW			4		10s			0.594	15.1		E. Schütz, Dir.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:57, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.6	30.01	762.2	75.7	24.3		SW			1.0							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.40	746.8	29.87	758.8	89.3	31.8	32	Calm					4	N		0	0	D. clouds	
Bombay	29.75	755.7	29.79	756.6	84.7	29.3	70	NNW	16	7.2			3	NW		0	0	D. clouds	
Poona	27.85	707.5	29.85	758.3	79.1	26.2	40	NW					9	NE		0	0	D. clouds	
Lahore	29.16	740.5	29.90	759.5	78.9	26.1	27	NW	0.8	0.4						0	0	Blue sky	
Belgaum	27.27	692.7	29.81	757.2	74.6	23.7	54	NE	6	2.7			7			0	0	D. clouds	
Roorkee	28.96	735.7	29.88	758.8	73.5	23.2	41	NW	2	0.9						0	0		
Agra	29.31	744.5	29.88	758.8	82.7	28.2	27	W								0	0		
Nagpur	28.79	731.2	29.84	758.0	73.6	23.1	45	NE	4.1	1.8			3			0	0	Hazy	
Lucknow	29.45	748.1	29.82	757.4	86.7	30.4	34	Calm	0.9	0.4						0	0	Blue sky	
Allahabad	29.53	750.0	29.84	758.0	76.7	24.3	46	Calm	0.2	0.1			0			0	0	Blue sky	
Patna	29.69	754.1	29.87	758.7	80.9	27.2	74	NE	0.3	0.1			4	NE	NE	0	0	D. clouds	
Hazaribagh	27.84	707.1	29.88	758.9	71.8	22.1	69	Calm	3.8	1.7			2			0	0		
Cuttack	29.74	755.3	29.82	757.4	80.0	26.7	68	NNE	4.0	1.8			7			0	0	D. clouds	
Calcutta (Alipore)	29.81	757.2	29.83	757.7	81.2	27.3	71	NNE	2.0	0.9			2			0	0	D. clouds	
Goalpara	29.47	748.6	29.86	758.5	79.1	26.2	66	ENE	5.2	2.3			4			0	0	D. clouds	
Chittagong	29.75	755.6	29.84	758.0	81.4	27.4	77	Calm	4.6	2.0			4			0	0	Misty	
Sibsagar	29.56	750.9	29.90	759.6	76.2	24.6	82	Calm	0.7	0.3			6			0	0	D. clouds	
Jubbulpore	28.48	723.5	29.85	758.1	81.7	27.6	23	NE	2.1	0.9			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.3 meters; Nagpur, 1,025 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.26	743.3	29.67	753.6	60.8	16.0	95	SW	0.7	0.3	.....	.....	10	.....	.....	0.902	22.9	.....	Prof. Giovanni Clodig.
Padua	29.53	750.1	29.64	752.9	60.6	15.9	75	S	6.3	2.8	.....	.....	9	SW	.....	0.142	3.6	.....	Prof. Dott. Lorenzoni
Vicenza	29.44	747.8	29.63	752.6	62.4	16.9	77	SW	3.1	1.4	.....	.....	6	W	.....	0.205	5.2	.....	Cont. Alm. Da Schio.
Bergamo	28.84	719.8	29.66	753.4	58.6	14.8	80	SE	.....	.....	2	.....	9	.....	.....	0.827	21.0	.....	Prof. Trionfini Carlo.
Milan	29.11	739.5	29.63	752.5	60.8	16.0	72	WSW	.....	.....	2	.....	4	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.76	730.5	29.67	753.5	61.9	16.6	16	NNW	9.8	4.4	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.78	705.5	29.68	753.8	56.7	13.7	41	NW	.....	.....	2	.....	4	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	28.65	727.7	29.66	753.3	65.1	18.4	54	S	.....	.....	2	.....	4	.....	.....	0.213	5.4	.....	Prof. L. Vassallo.
Genoa	29.51	749.6	29.68	753.8	64.9	18.3	57	SE	6.9	3.1	.....	.....	6	S	.....	0.102	2.6	.....	Prof. G. M. Garibaldi.
Parma	29.35	745.4	29.66	753.1	61.9	16.6	61	SW	.....	.....	6	.....	6	.....	.....	0.076	1.9	.....	Prof. P. Pigorini.
Florence	29.48	748.9	29.74	755.3	59.9	15.5	88	S	.....	.....	2	.....	10	SW	.....	0.354	9.0	.....	Cav. F. Meucci
Leghorn	29.63	752.7	29.72	754.8	62.6	17.0	76	W	10.5	4.7	.....	.....	10	W	.....	0.295	7.5	.....	Prof. P. Monte.
Pesaro	29.62	752.3	29.67	753.5	63.7	17.6	86	SW	13.0	5.8	.....	.....	10	.....	.....	0.118	3.0	.....	Prof. Luigi Guidi.
Urbino	28.17	715.4	29.70	754.4	61.9	16.6	74	SW	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. P. Serpieri
Rome	29.59	751.5	29.78	755.9	72.0	22.2	81	S	8.1	3.6	.....	.....	10	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.63	752.6	29.83	757.7	76.8	24.9	62	S	.....	.....	6	.....	2	SW	.....	0.024	0.6	.....	Prof. L. Palmieri.
Lecce	29.65	753.1	29.90	759.4	74.3	23.5	63	SW	15.4	6.9	.....	.....	6	S	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.57	751.0	29.76	755.8	74.3	23.5	57	SW	.....	.....	2	.....	10	SW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.97	756.8	29.83	757.7	76.6	24.8	77	SW	0	0	.....	.....	6	.....	.....	0	0	.....	Prof. F. D. Corti.
Palermo	29.57	751.1	29.82	757.4	72.7	22.6	61	SW	16.8	7.5	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.89	759.1	29.96	760.9	74.1	23.4	79	SSW	9.8	4.4	.....	.....	6	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.84	757.9	30.04	763.0	60.3	15.7	57	NW	11.4	5.1	.....	.....	10s;k	.....	.....	0	0	Cloudy	I. Arai, Director.
Tokei (Yeddo) Observatory	29.73	755.1	29.79	756.6	69.4	20.8	93	S	13.1	5.9	.....	.....	10n	.....	.....	0.200	5.08	Cloudy	Pr of. T. C. Mendenhall.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	61.8	16.6	73	N	.....	.....	3	0	0	.....	.....	0.528	13.4	Clear	P. Ceballos.
Guadalajara	25.10	637.4	30.18	766.6	51.8	11.0	63	SE	.....	.....	2	0	4	.....	W	0	0	Clear	Prof. L. Perez.
Leon	24.46	621.3	30.09	764.2	55.0	12.8	82	SW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.14	587.8	30.20	767.0	54.9	12.7	83	NW	1.1	0.5	.....	0	9k	.....	NE	0.004	0.1	Very cloudy	Central Observatory.
Pabello'n, (Aguascalts)	.....	.....	.....	.....	52.3	11.3	81	Calm	.....	.....	0	1cs	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	29.99	761.6	30.00	761.9	73.6	23.1	91	NW	.....	.....	3	0	10	.....	N	1.181	30.	Rainy	M. M. Cházaro.
San Luis Potosi	24.24	615.1	30.23	767.8	51.0	10.6	35	SE	.....	.....	.....	.....	10	.....	SE	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	30.04	762.9	30.07	763.6	77.0	25.0	76	NW	2.7	1.2	.....	2ck	6sk	N	.....	Inap.	Inap.	Cloudy	Prof. J. Rossell.
Zacatecas	22.57	573.5	30.19	766.9	52.7	11.5	86	SSE	.....	.....	1	0	1	.....	SSE	0	0	.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.3	30.08	764.1	48.2	9.0	90	E	2.2	1.0	.....	0	1	.....	Calm	0	0	Clear	Prof. P. Spina.
Durango	24.21	614.8	30.05	763.5	60.0	15.6	86	SW	.....	.....	2	6cs	0	.....	.....	0	0	½ cloudy	M. V. de Leon, C. E.
Colima	28.35	720.0	29.97	761.3	77.4	25.2	78	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.87	758.6	30.01	762.3	74.3	23.5	.....	Calm	.....	.....	0	6ks	4n	.....	N	6	0	Covered	Antonio Guerra y Guerra.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,285.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.67	753.7	29.67	753.7	52.9	11.6	.....	WSW	.....	.....	5	.....	.....	.....	.....	0.028	0.7	.....	
Groningen	29.50	749.4	29.56	750.8	49.8	9.9	.....	WSW	.....	.....	3	.....	.....	.....	.....	0.051	1.3	.....	
Helder	29.55	750.5	29.55	750.5	50.0	10.0	.....	SW	.....	.....	6	.....	.....	.....	.....	0.224	5.7	.....	
Hellevoetsluis	29.63	752.7	29.63	752.7	47.8	8.8	91	SW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.59	751.6	29.64	752.8	52.6	11.4	70	SW	.....	.....	3	.....	8	.....	.....	0.047	1.2	Very cloudy	H. v d Bras.

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.26	743.2	29.32	744.6	43.9	6.6	83	WNW	1.6	0.7	.....	.....	3	.....	.....	0	0	.....	
Brönö	29.34	745.2	29.38	746.2	44.6	7.0	69	SSE	7	3	.....	.....	6	.....	.....	0	0	.....	
Christiania	29.22	742.2	29.37	745.9	44.6	7.0	88	ESE	2	1	.....	.....	10	.....	.....	0.043	1.1	.....	
Tromsö	29.37	746 1	29.42	747.2	38.1	3.4	76	SW	7	3	.....	.....	7	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Angra, (Azores)	29.93	760.1	30.11	764.9	65.5	18.6	92	SE	8.7	3.9	.....	.....	8	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	28.99	736.4	30.02	762.5	61.5	16.4	88	NNE	16.8	7.5	.....	.....	0	.....	.....	0.272	6.9	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.93	760.2	30.02	762.4	69.4	20.8	59	SSE	8.7	3.9	.....	.....	4	.....	.....	0.480	12.2	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.69	754.0	30.04	763.1	59.7	15.4	49	NNE	28.6	12.8	.....	.....	0	.....	.....	0.299	7.6	.....	The Staff.
Ponta Delgada, (Azores)	30.10	764.5	30.17	766.3	68.0	20.0	71	SE	16.1	7.2	.....	.....	3	.....	.....	0	0	.....	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Naval Series. Vessels.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. M. Bastos, Com'd't.
Quanza, St. Thomas, Gulf of Guinea	.....	.....	29.97	761.2	84.2	29.0	.....	ESE	.....	.....	3	.....	4	.....	ESE	1	.....	D. clouds...	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 14° 42', W. 23° 4'..	.....	.....	29.99	761.7	78.4	25.8	.....	ENE	.....	.....	4	.....	0	.....	.....	2	NE	Blue sky.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Warsaw	29.16	740.7	29.58	751.3	55.2	12.9	87	W	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.16	740.6	29.57	751.0	67.7	14.3	84	S	5	2	.....	.....	10n;ks	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.35	745.6	29.60	751.8	49.5	9.7	96	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.62	752.3	29.63	752.7	50.2	10.1	83	SW	13	6	.....	.....	1;c;ck;k	.....	.....	.....	.....	Light rain...	Central Physical Obs.
Kieff	29.23	742.5	29.85	758.3	61.9	16.6	72	S	9	4	.....	.....	2k [s	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Nikolaiev	29.88	761.5	30.05	763.3	66.2	19.0	54	S	13	6	.....	.....	2k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.08	763.9	30.10	764.4	65.5	18.6	84	NE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.40	746.7	29.95	760.6	55.4	13.0	89	S	9	4	.....	.....	9ks	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.91	759.8	30.12	765.0	52.0	11.1	90	E	5	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	29.52	749.9	29.54	750.4	44.4	6.9	98	S	9	4	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.76	730.4	30.17	766.2	61.0	16.1	76	Calm	0	0	.....	.....	9k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.36	771.2	30.28	769.1	52.7	11.5	59	ESE	13	6	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.72	754.9	30.21	767.2	44.6	7.0	92	NE	9	4	.....	.....	4k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Kasan	29.93	760.3	30.21	767.4	45.5	7.5	62	SSE	5	2	.....	.....	7	.....	.....	.....	.....	Light clouds	Physical Cabinet
Ekaterinburg	29.24	742.6	30.22	767.6	45.3	7.4	33	W	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.04	762.9	30.28	769.0	44.6	7.0	43	NE	9	4	.....	.....	7ks	.....	.....	.....	.....	.....	
Tashkend	25.69	728.8	30.46	773.7	45.0	7.2	64	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.87	758.6	30.42	772.6	32.5	0.3	89	SW	5	2	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.64	752.9	29.94	760.4	36.1	2.3	94	WSW	7	3	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Peking, (China)	30.27	768.9	30.41	772.5	35.8	2.1	45	NW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.82	757 4	29.91	759.6	32.0	0.0	92	NE	2	4	.....	.....	4k	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Barcelona, Met. Obs'y	29.84	757.8	29.94	760.4	61.2	16.2	53	NW	1.7	0.75	.....	.....	0	.....	.....	0	0	Clear.....	Antonio Rave, Director
Bilbao, Met. Obs'y	30.05	763.2	30.10	764.6	60.6	15.9	79	W	1.5	0.68	.....	2	6	NW	.....	0.591	15.0	Almost cov'd	Prof. Manuel de Navera
Burgos, Met. Obs'y	27.13	689.0	.....	.....	49.3	9.6	71	NE	5.3	2.35	.....	.....	8	.....	.....	0	0	Cloudy.....	Domingo Martin y Perez
Madrid, Royal Observatory	27.79	705.9	30.02	762.6	55.8	13.2	57	NE	14.2	6.33	.....	0	0	.....	.....	0.368	9.1	Clear.....	The Staff.
Murcia, Met. Obs'y	29.97	761.2	30.12	765.0	62.6	17.0	53	NE	0.4	0.19	.....	.....	.....	.....	.....	0.232	5.89	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.22	742.2	30.12	765.1	55.6	13.1	68	NE	18.6	8.33	.....	.....	7	.....	.....	0	0	Cloudy.....	L. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.94	760.4	30.00	762.0	75.1	23.9	91	Calm	0	0	.....	4ck	5k;ks	E	.....	0.067	1.7	Fair.....	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.77	756.1	29.87	758.6	67.3	19.6	84	NNE	4.9	2.2	.....	0	10	.....	W	0.605	15.4	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.84	758.0	29.93	760.3	78.8	26.0	95	SE	5.2	2.33	.....	5kn	7kn	SE	SE	3.544	90.00	Overcast....	Leonardo de Tejeda, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.42	747.3	29.46	748.3	36.7	2.6	.....	Calm	.....	.....	0	.....	10	.....	.....	0	0	Foggy	
Umea	29.39	746.5	29.44	747.8	40.3	4.6	87	NE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.36	745.4	29.40	746.7	42.8	6.0	82	NW	.....	.....	2	.....	6	.....	.....	0	0	.....	
Stockholm	29.18	741.2	29.36	745.7	46.8	8.2	98	NW	.....	.....	4	.....	10	.....	.....	0.291	7.4	Raining	
Wisby	29.35	745.4	29.41	746.9	51.1	10.6	85	WSW	.....	.....	6	.....	7	.....	.....	0.102	2.6	.....	
Sub-Series.																			
Upsala	29.28	743.8	29.36	745.7	46.2	7.9	95	NE	.....	.....	.....	.....	8	.....	.....	0.009	0.22	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.52	724.3	29.96	760.9	48.7	9.3	64	SW	.....	.....	2	.....	8	.....	.....	0.382	9.7	Covered	The Observatory.
Zurich	28.25	717.5	29.91	759.8	46.4	8.0	77	W	.....	.....	4	.....	8	.....	.....	0.291	7.4	Rainy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.8 mm.; Thermometer, —1.1 cent.; Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.02	762.5	67.3	19.6	66	SE	0	0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.03	762.8	78.4	25.8	.....	S	.....	.....	2	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.88	758.9	30.00	761.9	75.9	24.4	54	N	.....	.....	2	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.69	754.1	29.76	755.9	48.8	9.3	92	SW	22	9.8	.....	.....	9n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Brockville, Ontario	29.79	756.7	30.10	764.5	31	— 0.6	.....	N	1	0.4	.....	.....	8s	.....	NW	0.15	3.8	Cloudy	W. R. Bigg.
*Chatham, N. B	29.78	756.4	29.84	757.9	47	8.3	92	S	5	2.2	.....	.....	10n	.....	S	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.88	758.9	29.92	760.0	49	9.4	86	SW	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.87	758.7	30.07	763.8	32.1	0.1	98	NW	.....	.....	1	.....	10s	.....	.....	0.345	8.77	Cloudy	James Smith, M. A.
Dalhousie, N. B	29.61	752.1	29.77	756.1	46.8	8.2	90	E	.....	.....	1	.....	.....	.....	.....	.....	.....	Drizzling	H. A. Johnson.
Esquimault, B. C	30.20	767.1	30.24	768.1	40.1	4.6	100	Calm	.....	.....	6cs	0	.....	.....	.....	0	0	Fair	W. H. Bevis.
*Father Point, Quebec	29.80	756.9	29.82	757.4	37	2.8	95	W	35	15.6	.....	.....	10s	.....	Calm	0.17	4.3	Cloudy	J. McWilliams.
Fredericton, N. B	29.80	756.9	29.87	758.7	48.1	8.9	94	SW	7	3.1	.....	.....	10s	.....	.....	0.078	1.98	Light rain	Prof. Harrison.
*Fort Garry Manitoba	29.21	741.9	30.09	764.3	19	— 7.2	76	SE	12	5.4	.....	5k	2ks	SW	SW	0	0	Cloudy	James Stewart.
Granton, Ontario	29.07	738.4	30.22	767.6	30	— 1.1	.....	W	.....	.....	1	.....	10n	.....	.....	0.15	3.8	Cloudy	James Grant.
*Halifax, N. S	29.82	757.4	29.95	760.7	46	7.8	92	S	4	1.8	.....	.....	10n	.....	S	0	0	Cloudy	F. Allison, M. A.
Hamilton, Ontario	29.86	758.4	30.24	768.1	33.5	0.8	81	W	.....	.....	2	6ck	0	W	.....	0	0	Clear	Geo. Dickson, M. A.
Heart's Content, N. F	29.87	758.7	29.90	759.4	47	8.3	100	NE	.....	.....	1	.....	10	.....	.....	0.01	0.3	Foggy	E. Weedon.
*Kingston, Ontario	29.77	756.1	30.12	765.0	32	0.0	88	N	9	4.0	.....	5k	2ks	NW	Calm	0.18	4.6	Clearing	S. Woods, M. A.
Little Glace Bay, N. S	29.94	760.5	29.98	761.5	44.1	6.7	91	S	4	1.8	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
*Montreal, Quebec	29.85	758.2	30.06	763.5	35	1.7	74	W	11	4.9	.....	.....	10s	.....	W	0.43	10.9	Cloudy	C. H. McLeod, C. E.
*Parry Sound, Ontario	29.43	747.5	30.16	766.1	28	— 2.2	88	E	6	2.7	.....	2cs	2ks	W	W	0.06	1.5	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.37	746.0	30.15	765.8	32.9	0.5	94	N	.....	.....	0	.....	10	.....	.....	0.16	4.1	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.52	749.8	30.25	768.3	29	— 1.7	94	W	9	4.0	.....	0	0	.....	.....	0.11	2.8	Clear	H. Morgan.
Port Hastings, N. S	29.89	759.2	29.94	760.5	49.5	9.7	.....	SE	2	0.9	.....	.....	.....	.....	.....	0	0	Cloudy	Peter Grant.
Port Stanley, Ontario	29.60	751.8	30.28	769.1	27	— 2.8	87	W	9	4.0	.....	0	0	.....	.....	0.05	1.3	Clear	M. Payne.
*Quebec, Quebec	29.65	753.1	29.98	761.5	33	0.9	76	NW	.....	.....	.....	0	0	.....	.....	0.45	11.4	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	29.67	753.6	30.15	765.8	29	— 1.7	83	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. Andrews, N. B	29.79	756.7	29.84	757.9	48	8.4	91	SW	8	3.6	.....	.....	Fog	.....	.....	0	0	Foggy	Dr. Gove.
St. John, N. B	29.76	755.9	29.92	760.0	48	8.9	92	S	16	7.2	.....	.....	10s	.....	.....	0.10	2.5	Overcast	G. Murdock, C. E.
*Saugeen, Ontario	29.42	747.3	30.15	765.8	36	2.2	66	W	15	6.7	.....	.....	8ks	.....	.....	0.12	3.0	Cloudy	K. Stewart.
Stayner, Ontario	29.37	746.0	30.18	766.6	32	0.0	80	Calm	0	0	.....	.....	10n	.....	NW	0.35	8.9	Light snow	R. J. Cole.
Stratford, Ontario	28.87	733.3	30.21	767.3	29.0	— 1.7	97	W	12.0	5.4	.....	0	2s	.....	.....	0.10	2.5	Fair	C. J. MacGregor, M.
*Sydney, C. B	29.98	761.5	30.02	762.5	45	7.2	94	SE	4	1.8	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill.
*Toronto, Ontario	29.78	756.4	30.17	766.3	36	2.2	78	W	16	7.2	.....	2k	5ks	NW	NW	0.17	4.3	Cloudy	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	46	7.8	100	NE	.....	.....	.....	.....	10	.....	.....	0.01	0.3	Overcast	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

1878.—October 28.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Upper. 0—10.	CLOUDS. Amount. Lower. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	29.35	758.2	30.09	764.3	41	5.0	65	W	17	7.6	.....	1k	0	W	.....	0.48	12.2	Clear	
Alpena, Michigan	29.51	749.5	30.19	766.8	28	— 2.2	77	W	12	5.4	.....	8cs	0	W	.....	0.04	1.0	Fair	
Atlanta, Georgia	29.01	736.8	30.21	767.3	39	3.9	81	NW	10	4.5	.....	1ck	Sm'e	W	Calm	0	0	Clear	
Atlantic City, New Jersey	30.19	766.8	30.20	767.1	41	5.0	56	NW	18	8.1	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Augusta, Georgia	30.02	762.5	30.20	767.1	54	12.2	87	NW	7	3.1	.....	2c	Haze	NE	.....	0	0	Hazy	
Baltimore, Maryland	30.24	768.1	30.29	769.4	42	5.6	50	NW	9	4.0	.....	0	Haze	.....	Calm	0.02	0.5	Clear	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	42	5.6	66	NW	17	7.6	.....	0	0	.....	.....	0	0	Clear	
Bismarck, Dakota	27.97	710.4	29.83	757.7	28	— 2.2	88	NW	19	8.5	.....	.....	10s	.....	Calm	0.04	1.0	Cloudy	
Boerne, Texas	28.63	727.2	.....	.....	45	7.2	84	N	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Boise City, Idaho	27.36	694.9	30.32	770.1	29	— 1.7	73	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.86	758.4	30.01	762.2	46	7.8	69	NW	16	7.2	.....	1cs	0	Calm	.....	0.01	0.3	Clear	
Brackettville, Texas	29.04	737.6	30.10	764.5	47	8.3	85	Calm	0	0	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	
Breckenridge, Minnesota	28.81	731.8	29.85	758.2	24	— 4.4	87	SE	17	7.6	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Brownsville, Texas	30.08	764.0	30.15	765.8	53	11.7	80	N	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Buffalo, New York	29.46	748.3	30.19	766.8	34	1.1	79	W	24	10.7	.....	0	1s	.....	W	0.50	12.7	Clear	
Burkes, Arizona	.....	.....	.....	.....	52	11.1	23	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.79	756.7	30.06	763.5	36	2.2	80	N	8	3.6	.....	.....	10n	.....	Calm	0.56	14.2	Light snow	
Cairo, Illinois	30.02	762.5	30.44	773.2	33	0.6	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Camp Apacha, Arizona	24.66	626.4	29.66	753.4	24	— 4.4	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.11	637.8	29.91	759.7	48	8.9	43	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.85	682.0	30.34	770.6	28	— 2.2	43	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.46	697.5	30.01	763.0	22	— 5.6	72	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.14	765.5	30.15	765.8	61	16.1	77	NE	22	9.8	.....	.....	10s	.....	NE	0	0	Cloudy	
Cape Henry, Virginia	30.19	766.8	30.21	767.3	53	11.7	64	NW	30	13.4	.....	.....	10s	.....	NW	0	0	Cloudy	
Cape Lookout, N. Carolina	30.13	765.3	30.14	765.5	61	16.1	88	NE	21	9.4	.....	.....	10s	.....	W	0	0	Cloudy	
Cape May, New Jersey	30.19	766.8	30.22	767.6	44	6.7	67	NW	40	17.9	.....	0	0	.....	.....	0	0	Clear	
Castroville, Texas	29.41	747.0	30.14	765.5	47	8.3	70	N	4	1.8	.....	.....	10s	.....	N	0	0	Threatening	
Charleston, South Carolina	30.10	764.5	30.16	766.1	62	16.7	88	N	5	2.2	.....	5ck	2s	SW	Calm	0	0	Fair	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	31	— 0.6	79	Calm	0	0	.....	0	8s	.....	Calm	0	0	Cloudy	
Chicago, Illinois	29.58	751.3	30.31	769.9	29	—1.7	78	SW	4	1.8	.....	8k	Fog	Calm	.....	0.04	1.0	Cloudy	
Cincinnati, Ohio	29.77	756.1	30.45	773.7	33	0.6	70	NW	3	1.3	.....	.....	Sm'e	.....	NW	0	0	Dense smoke	
Cleveland, Ohio	29.58	751.3	30.34	770.6	30	— 1.1	78	SW	10	4.5	.....	.....	10n	.....	SW	0.58	14.7	Light snow	
Coleman City, Texas	28.47	723.1	30.22	767.6	39	3.9	100	E	4	1.8	.....	.....	10n	.....	E	0.46	11.7	Light rain	
Columbus, Ohio	29.51	749.5	30.41	772.4	28	— 2.2	67	W	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Conchо, Texas	28.16	715.3	29.90	759.4	38	3.3	63	E	4	1.8	.....	.....	10s	.....	E	0.40	10.2	Cloudy	
Corsicana, Texas	29.83	757.7	30.32	770.1	43	6.1	75	NE	4	1.8	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Davenport, Iowa	29.56	750.8	30.24	768.1	33	0.6	70	S	15	6.7	.....	Haze	1s	Calm	S	0	0	Fair	
Decatur, Texas	29.07	738.4	30.19	766.8	41	5.0	82	E	4	1.8	.....	.....	10n	.....	.....	0.15	3.8	Cloudy	
Denison, Texas	29.48	748.8	30.31	769.9	43	6.1	51	E	6	2.7	.....	.....	10s	.....	E	0	0	Cloudy	
Denver, Colorado	24.76	628.9	29.98	761.5	34	1.1	61	S	8	3.6	.....	0	2s	.....	N	0	0	Clear	
Des Moines, Iowa	29.14	740.1	30.04	763.0	37	2.8	63	SW	16	7.2	.....	.....	10s	.....	SW	0	0	Threatening	
Detroit, Michigan	29.61	752.1	30.32	770.1	27	— 2.8	76	W	1	0.4	.....	0	0	.....	.....	0.16	4.1	Clear	
Dodge City, Kansas	27.46	697.5	29.87	758.7	27	— 2.8	88	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Dubuque, Iowa	29.44	747.8	30.18	766.6	27	— 2.8	76	SW	8	3.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.37	746.0	30.08	764.0	25	— 3.9	75	E	10	4.5	.....	.....	10s	.....	E	0	0	Cloudy	
Eagle Pass, Texas	29.41	747.0	30.18	766.6	47	8.3	92	N	3	1.3	.....	.....	10n	.....	Calm	0.05	1.3	Light rain	
Eastport, Maine	29.80	756.9	29.86	758.4	50	10.0	86	S	11	4.9	.....	.....	10s	.....	S	0	0	Cloudy	
Edinburg, Texas	.....	.....	.....	.....	54	12.2	80	N	.....	.....	6	.....	10s	.....	S	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	55	12.8	45	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.51	749.5	30.25	768.3	37	2.8	100	NW	24	10.7	.....	.....	10s	.....	NW	0.19	4.8	Cloudy	
Escanaba, Michigan	29.55	750.6	30.25	768.3	19	— 7.2	69	NW	4	1.8	.....	8c	0	NW	.....	Inap.	Inap.	Cloudy	
Florence, Arizona	28.47	723.1	30.07	763.8	40	4.4	56	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.63	651.0	29.69	754.1	28	— 2.2	34	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.24	641.1	30.20	767.1	54	12.2	62	SW	4	1.8	.....	0	2s	.....	SW	Inap.	Inap.	Fair	
Fort Gibson, Indian Ter	29.73	755.1	30.30	769.6	33	0.6	70	Calm	0	0	.....	2c	0	N	.....	0	0	Clear	
Fort Griffin, Texas	28.95	735.3	30.27	768.8	42	5.6	83	E	4	1.8	.....	.....	10s	.....	Calm	0.15	3.8	Cloudy	
Fort McKavett, Texas	27.89	708.4	29.87	758.7	43	6.1	75	E	2	0.9	.....	.....	10s	.....	E	0	0	Cloudy	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.99	736.3	30.14	765.5	41	5.0	57	S	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Fredericksburg, Texas	28.40	721.3	30.00	762.0	47	8.3	48	N	5	2.2	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Galveston, Texas	30.15	765.8	30.20	767.1	52	11.1	79	NE	12	5.4	.....	10cs	0	Calm	.....	0.10	2.5	Cloudy	
Graham, Texas	29.10	739.1	30.20	767.1	42	5.6	83	E	5	2.2	.....	.....	10s	.....	Calm	0.22	5.6	Cloudy	
Grand Haven, Michigan	29.62	752.3	30.30	769.6	35	1.7	70	NW	10	4.5	.....	5k	0	NW	.....	0.25	6.3	Fair	
Indianapolis, Indiana	29.57	751.1	30.41	772.4	28	— 2.2	77	Calm	0	0	.....	0	Fog	.....	.....	Inap	Inap.	Foggy	
Indianola, Texas	30.17	766.3	30.20	767.1	51	10.6	86	N	17	7.6	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Jacksboro, Texas	29.06	738.1	30.26	768.6	40	4.4	91	SE	7	3.1	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Jacksonville, Florida	30.11	764.8	30.14	765.5	63	17.2	89	NE	3	1.3	.....	2k	0	Calm	.....	0	0	Fair	
Keokuk, Iowa	29.59	751.6	30.24	768.1	34	1.1	61	S	11	4.9	.....	.....	9s	.....	W	0	0	Cloudy	
Key West, Florida	30.01	762.2	30.04	763.0	73	22.8	90	NE	12	5.4	.....	.....	10n	.....	NE	0.14	3.6	Light rain	
Kittyhawk, North Carolina	30.14	765.5	30.16	766.1	55	12.8	81	N	40	17.9	.....	.....	10s	.....	N	0	0	Cloudy	
Knoxville, Tennessee	29.30	744.2	30.37	771.4	32	0.0	69	NE	1	0.4	.....	1ck	0	NE	.....	0.86	21.8	Clear	
La Crosse, Wisconsin	29.28	743.7	30.05	763.3	32	0.0	79	S	15	6.7	.....	.....	10n	.....	Calm	0.03	0.8	Light snow	
La Mesilla, New Mexico	26.16	664.4	30.31	769.9	33	0.6	69	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.76	755.9	30.11	764.8	49	9.4	71	N	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Lead City, Dakota	24.69	627.1	29.96	761.0	29	— 1.7	59	NW	9	4.0	.....	0	5s	.....	NW	0	0	Fair	
Leavenworth, Kansas	29.29	744.0	30.18	766.6	33	0.6	61	S	8	3.6	.....	0	5ks	.....	SW	0	0	Fair	
Los Angeles, California	29.64	752.8	29.98	761.5	54	12.2	21	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.82	757.4	30.42	772.7	29	— 1.7	67	NE	6	2.7	.....	0	Sm'e	.....	NE	Inap.	Inap.	Smoky	
Lynchburg, Virginia	29.59	751.6	30.30	769.6	42	5.6	42	NW	8	3.6	.....	0	0	.....	.....	0.02	0.5	Clear	
Madison, Wisconsin	29.16	740.7	30.20	767.1	31	0.6	79	S	12	5.4	.....	.....	10s	.....	Calm	0.01	0.3	Cloudy	
Marquette, Michigan	29.44	747.8	30.19	766.8	21	— 6.1	71	SW	14	6.3	.....	8c	0	SW	.....	0.26	6.6	Cloudy	
Mason, Texas	28.55	725.2	30.37	771.4	44	6.7	68	Calm	0	0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.51	749.5	30.28	769.1	28	— 2.2	71	SW	7	3.1	.....	1k	8s	Calm	Calm	0.03	0.8	Cloudy	
Mobile, Alabama	30.19	766.8	30.24	768.1	48	8.9	81	N	16	7.2	.....	8ck	2s	W	NE	0	0	Cloudy	
Montgomery, Alabama	30.03	762.7	30.28	769.1	42	5.6	83	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.26	743.2	30.36	771.1	36	2.2	71	W	4	1.8	.....	1cs	0	Calm	.....	0.52	13.2	Clear	
Mt. Washington, N. H.	23.52	597.4	29.88	758.9	20	— 6.7	100	NW	50	22.4	.....	.....	Fog	.....	NW	0.38	9.7	Foggy	
Nashville, Tennessee	29.84	757.9	30.42	772.7	32	0.0	79	Calm	0	0	.....	0	Sm'e	.....	Calm	0.15	3.8	Clear	
New Haven, Connecticut	29.98	761.5	30.10	764.5	47	8.3	62	NW	7	3.1	.....	0	0	.....	.....	0.08	2.0	Clear	
New London, Connecticut	30.04	763.0	30.09	764.3	51	10.6	69	NW	6	2.7	.....	2k	1s	NW	N	0.03	0.8	Fair	
New Orleans, Louisiana	30.15	765.8	30.21	767.3	51	10.6	72	N	12	5.4	.....	.....	10ks	.....	Calm	Inap.	Inap.	Cloudy	
Newport, Rhode Island	30.00	762.0	30.05	763.3	49	9.4	64	NW	16	7.2	.....	1k	0	W	.....	0	0	Clear	
New York, New York	30.00	762.0	30.18	766.6	42	5.6	65	W	18	8.0	.....	0	Haze	.....	Calm	0.07	1.8	Clear	
Norfolk, Virginia	30.18	766.6	30.24	768.1	50	10.0	65	N	13	5.8	.....	.....	10s	.....	NE	0	0	Cloudy	
North Platte, Nebraska	27.10	688.3	29.74	755.4	34	1.1	79	W	8	3.6	.....	.....	10s	.....	W	0	0	Cloudy	
Olympia, Washington Ter.	30.25	768.3	30.29	769.4	33.3	0.7	100	S	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Omaha, Nebraska	28.85	732.8	29.97	761.2	38	3.3	81	S	12	5.4	.....	.....	10s	.....	Calm	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.76	755.9	30.09	764.3	40	4.4	82	W	17	7.6	.....	.....	10n	.....	W	0.82	20.8	Light rain...	
Pembina, Dakota	29.14	740.1	30.02	762.5	21	— 6.1	86	E	13	5.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	30.18	766.6	30.24	768.1	41	5.0	57	NW	14	6.3	.....	0	0	.....	.....	0.18	3.3	Clear	
Phœnix, Arizona	28.83	732.3	.....	.....	45	7.2	31	Calm	.....	.....	1	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.68	447.2	29.89	759.2	6	—14.4	76	N	36	16.1	.....	5cs	0	N	.....	0	0	Fair	
Pioche, Nevada	24.16	613.6	29.93	760.2	36	2.2	39	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.50	749.3	30.35	770.9	33	0.6	70	NW	6	2.7	.....	5k	0	NW	.....	0.08	2.0	Fair	
Port Huron, Michigan	29.58	751.3	30.29	769.4	29	— 1.7	78	W	8	3.6	.....	0	0	.....	.....	0.23	5.8	Clear	
Portland, Maine	29.88	758.9	29.93	760.2	49	9.4	71	W	8	3.6	.....	5k	0	N	.....	0.05	1.3	Fair	
Portland, Oregon	30.27	768.8	30.36	771.6	37.5	3.1	90	S	2	0.9	.....	0	2s	.....	Calm	0	0	Clear	
Prescott, Arizona	24.80	629.9	30.10	766.1	22	— 5.6	45	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.47	748.5	30.34	770.6	41	5.0	91	E	2	0.9	.....	.....	10n	.....	NE	0.02	0.5	Light rain	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	70	21.1	80	NE	9	4.0	.....	2ck	2s	Calm	NE	0	0	Fair	
Red Bluff, California	29.74	755.4	30.11	764.8	52	11.1	35	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	30.02	762.5	30.24	768.1	53	11.7	80	N	.....	.....	1	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.51	749.5	30.15	765.8	35	1.7	90	W	18	8.0	.....	8ck	0	W	.....	0.01	0.3	Fair	
Roseburg, Oregon	29.75	755.6	30.36	771.1	33.0	0.6	89	SW	1	0.4	.....	0	1s	.....	Calm	0	0	Clear	
Sacramento, California	30.02	762.5	30.10	764.5	46	7.8	47	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.78	756.4	30.39	771.9	33	0.6	79	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.15	765.8	30.17	766.3	59	15.0	94	N	10	4.5	.....	0	8s	.....	N	0	0	Fair	
St. Paul, Minnesota	29.06	738.1	29.91	759.7	28	— 2.2	77	SE	16	7.2	.....	.....	10n	.....	Calm	0.04	1.0	Light snow	
Salt Lake City, Utah	25.81	655.6	30.14	765.5	34	1.1	52	E	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
San Antonio, Texas	29.47	748.5	30.07	763.8	50	10.0	58	NE	4	1.8	.....	.....	10s	.....	NE	0	0	Cloudy	
San Diego, California	29.93	760.2	30.00	762.0	55	12.8	22	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.07	738.6	30.39	771.9	31	— 0.6	69	SW	12	5.4	.....	0	1ks	.....	Calm	0.02	0.5	Clear	
Sandy Hook, New Jersey	30.14	765.5	30.17	766.3	46	7.8	64	NW	23	10.3	.....	0	0	.....	.....	0.03	0.8	Clear	
San Francisco, California	30.01	762.2	30.08	764.0	56	13.3	69	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	28.27	691.5	29.81	757.2	25	— 3.9	38	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.07	763.8	30.16	766.1	60	15.6	88	NW	8	3.6	.....	5k	Haze	W	Calm	0	0	Fair	
Shreveport, Louisiana	30.07	763.8	30.30	769.6	40	4.4	82	E	8	3.6	.....	.....	10s	.....	W	Inap.	Inap.	Cloudy	
Silver City, New Mexico	24.33	618.0	.....	.....	31	— 0.6	68	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.14	765.5	30.17	766.3	59	15.0	94	N	8	3.6	.....	10ck	0	SW	.....	0	0	Cloudy	
Springfield, Massachusetts	29.95	760.7	30.08	764.0	45	7.2	53	NW	9	4.0	.....	0	0	.....	.....	0.23	5.8	Clear	
Stockton, Texas	27.10	688.3	30.10	764.5	38	3.3	62	E	4	1.8	.....	5k	0	SW	.....	0.07	1.8	Fair	
Thatcher's Island, Mass	29.94	760.6	29.99	761.7	48	8.9	78	NW	18	8.0	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio	29.66	753.1	30.37	771.4	31	— 0.6	69	SW	10	4.5	.....	0	0	.....	.....	0.01	0.3	Clear	
Tucson, Arizona	.....	.....	...	.....	46	7.8	40	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.12	765.0	30.15	765.8	61	16.1	58	N	10	4.5	.....	0	5ks	.....	SW	0	0	Fair	
Umatilla, Oregon	29.88	758.9	.....	.....	34.5	1.4	79	SE	3	1.3	.....	5ck	2s	NW	NW	0	0	Fair	
Unalashka, Aleutian Islands	.....	.....	.....	.....	35	1.7	100	Calm	.....	.....	0	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.31	744.5	30.15	765.8	45	7.2	84	NE	9	4.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Vicksburg, Mississippi	30.07	763.8	30.34	770.6	37	2.8	90	NE	5	2.2	.....	0	0	.....	.....	0.07	1.8	Clear	
Virginia City, Montana	24.25	615.9	29.73	755.1	37	2.8	63	SW	16	7.2	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Visalia, California	29.76	755.9	30.14	765.5	43	6.1	75	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.20	767.1	30.32	770.1	39	3.9	55	NW	14	6.3	.....	0	0	.....	.....	0.07	1.8	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	38	3.3	31	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	30.07	763.5	30.15	765.8	57	13.9	87	N	8	3.6	.....	0	5s	.....	N	0	0	Fair	
Winnemucca, Nevada	25.86	656.8	30.22	767.6	22	— 5.6	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.97	761.2	30.02	762.5	51	10.6	65	NW	16	7.2	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Yankton, Dakota	28.64	727.4	29.95	760.7	37	2.8	71	W	4	1.8	.....	5cs	0	W	.....	0	0	Fair	
Yuma, Arizona	29.82	757.4	29.98	761.5	58	14.4	17	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	30.10	764.5	30.15	765.8	7.0	—13.9	89	N	9	4.0	.....	3k	2s	N	N	0.01	0.3	Fair	J. Fortescue, W. Wood.
Fayettville, Ark	28.66	728.0	30.15	765.8	30	— 1.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. B. Gordon.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	77	25.0	86	E	1.2	0.5	.....	8c	2n	E	E	0.21	5.3	Cloudy	Chas. Hassenbrink.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	79	26.1	82	NE	9	4.0	.....	2c	8ks	E	.....	0.69	17.5	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I.	30.06	763.5	30.07	763.8	78	25.6	90	Calm	0	0	.....	8c?	8n?	Calm	N	0.32	8.1	.....	James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	81	27.2	.....	E	8.3	3.7	.....	.....	.....	.....	.....	Inap.	Inap.	Light shower	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.92	760.0	29.92	760.0	85	29.4	72	NE	.....	.....	3	3c	5k	E	.....	0	0	Fair	C. J. Hering.
Medellin, Colombia, S. A.	25.18	639.6	.....	.....	65.0	18.3	90	NW	2	0.9	.....	.....	10n	.....	.....	0.11	2.8	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.74	755.4	30.05	763.3	73	22.8	100	S	.....	.....	.....	k	k	.....	.....	.....	.....	.....	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,338 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,750 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353. 6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayettville, Ark., 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,396 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.22 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.16 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Pioche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er 0—10.	CLOUDS. Amount. Low'r 0—10.	CLOUDS. Direction. Up'er From—	CLOUDS. Direction. Low'r From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.28	769.1	53	11.7	53	11.7	80	N	6	2.7	.....	.....	2	.....	NE	0	0	.....	.....	Fair	
NavyYard, Portsmouth, N.H	29.85‡	758.2‡	.....	.....	46	7.8	77	W	3	1.3	.....	.....	0	.....	.....	1.	25.	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.83*	757.7*	76	24.4	70.5	21.4	87	SW	.....	.....	6	.....	10n;ks	.....	SW	0.09	2.3	.....	.....	Gloomy.....	
Adams. Valparaiso, Chili.....	29.98	761.5	59	15.0	57	13.9	94	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	Smooth	.....	Fair.....	
Alaska, S. 5° 45′, W. 81° 18′.....	30.07	763.8	67	19.4	65	18.3	89	SE	.....	.....	3	.....	10	.....	SE	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	30.00‡	762.0‡	.....	.....	70	21.1	61	W	.....	.....	1	.....	3	.....	Calm	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.05	763.3	64	17.8	63	17.2	52	NW	.....	.....	4	.....	10	.....	NW	.....	.....	Smooth	.....	Squally.....	
Canonicus, New Orleans, La.....	30.13	765.3	44	6.7	53	11.7	80	N	.....	.....	5	.....	6	.....	.....	.....	.....	... .	.....	Cloudy.....	
Colorado. New York, N. Y.....	30.14‡	765.5‡	.....	.....	44	6.7	61	NW	22	9.8	.....	.....	0	.....	.....	0.03	0.8	.....	.....	Clear	
Constitution, Havre, France.....	.....	.....	.....	.....	52	11.1	86	W	.....	.....	4	.....	5	.....	W	.....	.....	.....	.....	Showery	
Despatch, Constantinople, Turkey	30.03‡	762.7‡	.....	.....	70	21.1	70	SE	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Essex, Cape Town.....	30.06	763.5	64	17.8	61	16.1	100	W	.....	.....	5	.....	2	.....	W	.....	.....	.....	.....	Clear	
Franklin, Norfolk, Va.....	30.32	770.1	66	18.9	51	10.6	86	N	6	2.7	.....	.....	10	.....	N	0	0	.....	.....	Cloudy.....	
Gettysburg Jaffa, Syria.....	29.92‡	760.0‡	.....	.....	77	25.0	64	NNW	.....	.....	3	.....	1	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Guard. N 16° 53′, W. 50° 12′.....	30.03	762.7	85	29.4	84	28.9	71	SE	....	.....	2	.....	2	.....	SE	.....	.....	Smooth	.....	Clear.....	
Hartford, St. Catherine Strait.....	30.10	764.5	72	22.2	70	21.1	58	NNW	6.0	2.7	.....	.....	2	.....	.....	0	0	Smooth	.....	Clear	
Marion, N. 41° 05′, E. 11° 50′...	29.79	756.7	74	23.3	73	22.8	72	WSW	.....	.....	2	.....	10	.....	SW	0	0	Smooth	WSW	Cloudy.....	
Michigan, Erie, Pa.....	30.13†	765.3†	.....	.....	39	3.9	60	SW	.....	.....	7	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan	29.80‡	756.9‡	.....	.....	71	21.7	85	S	.....	.....	3–5	.....	10	.....	S	.....	.....	.....	.....	Squally	
New Hampshire, Port Royal, S. C.....	30.28	769.1	67	19.4	62	16.7	100	NNW	12	5.4	.....	.....	5	.....	SW	0	0	.....	.....	Cloudy	
Onward, Callao, Peru.....	30.04†	763.0†	.....	.....	63	17.2	89	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.36	771.1	43	6.1	37	2.8	40	NNW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	40	4.4	100	NW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Santa Cruz, W. I.....	30.06	763.5	83	28.3	82	27.8	96	ENE	.....	.....	2	.....	10	.....	E	.....	.....	Smooth	.....	Rainy.....	
Powhatan, New York, N. Y.....	30.16‡	766.1‡	.....	.....	45	7.2	61	NW	12.0	5.4	.....	.....	.....	.....	.....	0.08	2.0	.....	.....	Clear	
Quinnebaug, Norfolk, Va...	30.24‡	768.1‡	.....	.....	52	11.1	73	NNE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Cloudy.....	
Ranger. Hong-Kong, China.....	30.17	766.3	80	26.7	79	26.1	74	NE	.....	.....	3	.....	2	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo. Brownsville, Texas.....	29.90	759.4	58	14.4	57	13.9	94	WNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Santee, Annapolis, Md...	30.27‡	768.8†	.....	.....	43	6.1	70	NW	.....	.....	5	.....	0	.....	.....	0.05	1.3	.....	.....	Clear.....	
Saratoga, Philadelphia, Pa.....	30.18	766.6	.....	.....	41	5.0	53	WNW	.....	.....	1	.....	0	.....	.....	Mod'ate	Mod'ate	.....	.....	Clear.....	
St. Louis, League Island, Pa	30.12	765.0	59	15.0	44	6.7	68	NW	8	3.6	.....	.....	0	.....	.....	0.1	3.	.....	.....	Clear.....	
Supply, Havre, France.....	29.85	758.2	54	12.2	53	11.7	80	WNW	.....	.....	3–6	.....	8	.....	.....	.....	.....	....	.....	Cloudy	
Trenton, Villafranca, France.....	29.76‡	755.9‡	.....	.....	69	20.6	56	SSW	.....	.....	1	.....	2	.....	W	.....	.....	.....	.....	Clear...	
Vandalia, Villafranca, France	29.62‡	752.3‡	.....	.....	69	20.6	82	SSW	.....	.....	2	.....	2	.....	SSW	.....	.....	Mod'ate	SSW	Clear	
Wabash, Boston, Mass.....	.....	.....	.....	.....	48	8.9	63	NW	6	2.7	.....	.....	2	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; **the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity.** *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; **corrections applied at this office.** The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, N. 23° 05′, E. 117° 28′		30.11*	764.8*	75	23.9	90	NE			5		10		NE		Rough	NE	Drizzling	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Seattle, W. T.		30.23*	767.8*	45	7.2	84	NW			1		3			0			Fine	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson.
S. S. Celtic, N. 41° 52′, W. 58° 29′		29.62*	752.3*	58	14.4	??	N			6				NW	0	Heavy	NNE	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 33° 38′, W. 140° 21′		30.10*	764.5*	66	18.9	69	E			3		n		SE	0	Mod'ate	SE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreesen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 29′, W. 18° 40′		30.28	769.1	55.0	12.8	68	N			4		8		N	0	4	NNE	Overcast	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	Upper.	Lower.					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 41° 32′, W. 54° 01′		29.84*	757.9*	54	12.2	87	N			7		9		ENE	0	Sharp	ENE	Cloudy	Captain Sargent.
S. S. Ohio. N. 50° 28′, W. 36° 51′ 30″		29.98	761.5	56	13.3	94	SSE			6		10		SSE		None?	SSE?	Dull	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 16° 55′, W. 74° 52′		29.51	757.2	79	26.1	100	ENE	11	4.9			8n		NE	1.63 in. or 41.4 mm.	Short sea		Raining	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 29, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:28 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.11	764.7	67.6	19.8	80	ESE	.....	.....	5	.....	4	.....	.....	0.079	2.0	Cloudy.....	Kesxuche.
Algiers	.....	.....	30.05	763.2	66.6	19.2	84	ESE	.....	.....	3	.....	5	.....	.....	0	0	Cloudy.....	Touriliere.
La Calle	.....	.....	30.04	763.1	64.8	18.2	80	NNW	.....	.....	5	.....	10	.....	.....	0.913	23.2	Covered.....	Foufrede.
Tunis	.....	.....	30.00	762.0	67.0	19.8	80	NW	.....	.....	6	.....	10	.....	.....	0.028	0.7	Covered.....	Jacques.
Sfax	.....	.....	30.04	763.0	78.8	26.0	.....	NNE	.....	.....	5	.....	6	.....	.....	0	0	Cloudy.....	Gau.
Saida	.....	.....	30.04	763.1	55.4	13.0	88	N	.....	.....	3	.....	6	.....	.....	0	0	Cloudy.....	Herbin.
Tebessa	.....	.....	29.95	760.6	56.7	13.7	67	W	.....	.....	3	.....	8	.....	.....	Inap.	Inap.	Very cloudy	Watrin.
Geriville	.....	.....	29.98	761.5	61.2	16.2	85	Calm	.....	.....	0	.....	10	.....	.....	0.394	10.0	Covered	Brugniaux.
Laghouat	.....	.....	30.01	762.3	62.6	17.0	77	S	.....	.....	1	.....	8	.....	.....	0.402	10.2	Very cloudy	Bertrand.
Biskra	.....	.....	30.03	762.7	70.5	21.4	58	NW	.....	.....	1	.....	5	.....	.....	0.039	1.0	Cloudy.....	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.31	744.5	29.87	758.6	49.5	9.7	83	NE	.....	.....	1	.....	10	.....	.....	0.083	2.1	.....	Prof. Ivan Stoir.
Cracow, I. R. Observatory	29.06	738.2	29.83	757.7	50.0	10.0	82	SW	.....	.....	1	.....	10	.....	.....	0.079	2.0	.....	Dr. Wierzbiski
Eperies	28.92	734.6	29.80	756.9	51.8	11.0	77	N	.....	.....	1	.....	10s	.....	S	0.146	3.70	.....	Julius Mikolik.
Gratz	28.63	727.1	29.88	758.9	49.5	9.7	73	S	.....	.....	2	.....	9	.....	.....	0.801	20.35	.....	Andreas Rospini.
Hermannstadt	28.30	718.7	29.72	754.9	67.8	19.9	59	SW	.....	.....	1	.....	10	.....	.....	0	0	.....	Prof. A. Gottschling.
Kremsmünster	28.45	722.6	29.80	756.8	48.2	9.0	70	E	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. C. Wagner.
Lemberg	28.78	730.9	29.70	756.0	50.4	10.2	91	S	.....	.....	1	.....	10	.....	.....	0.228	5.8	.....	Dr. T. Stanecki.
Pola	29.67	753.7	29.78	756.5	59.0	15.0	64	E	.....	.....	2	.....	8ks	.....	.....	0.555	14.1	.....	I.R.Hydrographic Office
Szathmar	29.36	745.7	29.82	757.4	55.0	12.8	96	SW	.....	.....	3	.....	10	.....	.....	0.512	13.0	.....	Julius Csics, S. J.
Szegedin	29.55	750.6	29.83	757.7	51.4	10.8	87	NW	.....	.....	1	.....	10	.....	.....	0.203	5.15	.....	Karl Stancel.
Trieste	29.73	755.1	29.83	757.7	56.3	13.5	89	E	.....	.....	1	.....	6	.....	.....	0.339	8.6	Thunder storm..	P. Busin.
Vienna	29.13	739.9	29.86	758.1	52.5	11.4	66	S	.....	.....	1	.....	6	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer: Corrected for instrumental error and temperature. Inches.	Barometer: Corrected for instrumental error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28 26	717.7	29.80	756.8	39.9	4.4	91	W	.....	.....	4	.....	10	.....	.....	0.220	5.6	.....	Prof. M. Passau.
Brussels	29.51	749.6	29.72	754.8	46.2	7.9	73	W	.....	.....	5	.....	10	.....	NNW: W	0.035	0.90	.....	Royal Observatory
Furnes	29.76	755.9	29.78	756.5	46.8	8.2	70	WNW	.....	.....	5	.....	8	.....	.....	0.622	15.8	.....	M. E. de Cae
Maeseyck	29.52	749.9	29.65	753.2	44.8	7.1	92	SW	.....	.....	2	.....	10	.....	.....	0.299	7.6	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

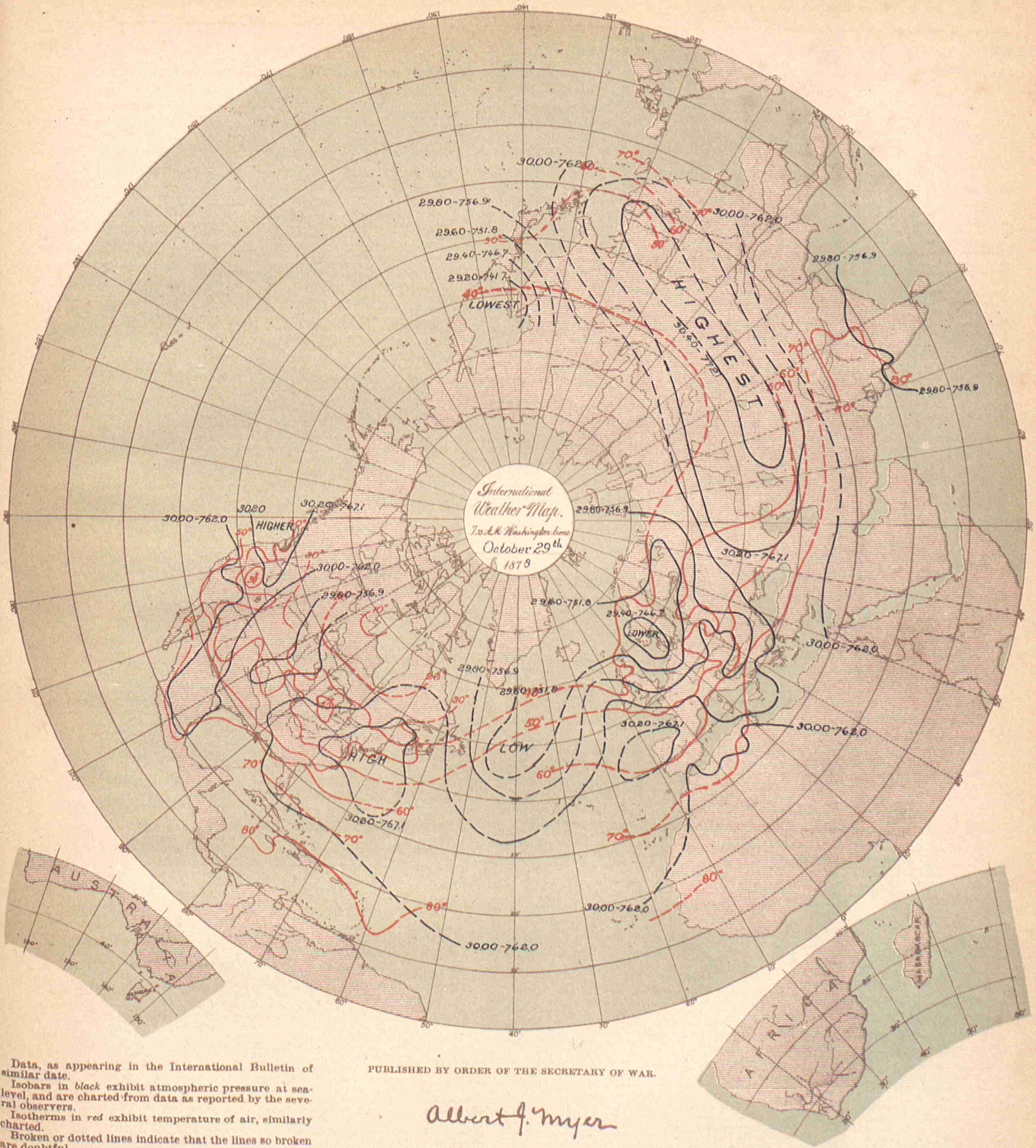
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force 0–10.	Clouds. Amount. Up'er 0–10.	Low'r 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.57	751.1	29.67	753.6	36.9	2.7		NNW	30	13.4			8			0.165	4.19	Blue sky	W. Boswell.
Ardrossan	29.77	756.1	29.78	756.4	44	6.7		NW			3		8					Blue sky	George Carrick.
Armagh, Observatory			29.88	758.9	37.9	3.3		NNW	8	3.6			8			Blank	Blank	D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.77	756.1	42.8	6.0		W	20	8.9			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.32	744.7	29.72	754.9	43.3	6.3		NW			2		6			0.22	5.6	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.89	759.2	29.92	760.0	80	26.7		NE			2		8					Overcast	Pvt. G. W. Roberts, A.
Cambridge, Observatory			29.76	755.9	47.0	8.3		NW			2		5					D. clouds	H. Todd. [H.O.
Cardington			29.68	753.9	44.0	6.7		NW			1		8					Overcast	John McLaren.
Chatham, School M. E.	29.67	753.6	29.80	756.9	45.2	7.3		NW			2		7					D. clouds	Lt. G. W. Morris, R. E.
Dartmoor	28.39	721.1	29.89	759.2	39.4	4.1		NW			3		9					Rain & fog	Alexander Watt.
Donaghadee	29.81	757.2	29.84	757.9	40	4.4		NNW			5		10					Raining	J. Mac Gowan.
Dover	29.74	755.4	29.76	755.9	45	7.2		NW			4		7					Misty	J. Costello.
Falmouth, Observatory	29.74	755.4	29.97	761.2	47.0	8.3		WNW			4		10					Overcast	The Staff.
Fort Napier, (Natal)	27.63	701.8	29.95	760.7	73.3	22.9		SE			3		2					D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.67	753.6	29.90	759.4	85	29.4		Calm			0		4					D. clouds	
Galway, Queen's College			29.97	761.2	46	7.8		NW			3		9					Gloomy	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.84	757.9	29.90	759.4				E			5		2					D. clouds	'orpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.58	751.3	29.79	756.7	41.9	5.5		W			3		2					Blue sky	D. G. Maclean.
Great Yarmouth	29.67	753.6	29.68	753.9	43	6.1		NW			5		6					D. clouds	G. T. Watson.
Greenwich, Royal Obs'y	29.62	752.3	29.79	756.7	44.8	7.1		WNW			2		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.71	754.6	29.94	760.5	45	7.2		WNW			5		8					Hailing	Dr. S. E. Hoskins, F.R.S.
Helston			29.99	761.7	48	8.9		N			2		n			0.6	1.5	Raining	M. P. Moyle.
Holyhead	29.76	755.9	29.82	757.4	45	7.2		NW			4		10					Raining	John Tilston.
Jersey	29.65	753.9	29.98	761.5	45.5	7.5		NW			5		9			Blank	Blank	Gloomy	J. Fisher.
Kew, Observatory	29.76	755.9	29.80	756.9	44.9	7.2		WNW	12	5.4			9					Misty	The Staff.
Kingstown	29.86	758.4	29.89	759.2	44	6.7		NW			6		7			Blank	Blank	D. clouds	George Mitchell.
Leicester, Museum			29.77	756.1	42.9	6.1		NW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.77	756.1	29.84	757.9	79	26.1		SSE			4		6cs					D. clouds	Sergt. Beckett.
Nairn	29.66	753.4	29.75	755.6	36	2.2		NW			3		5					½ clouded	W. D. Penny.
Nassau, (Bahamas)			30.05	763.3	76.5	24.7		E			1		10					Overcast	C. S. Duncombe.
Nottingham, Observatory	29.56	750.8	29.75	755.6	46.3	7.9		NW			2		9c;k		NW; W	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.25	742.9	29.78	756.4	40.5	4.7		W			4		10					Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.80	756.9	43	6.1		W			2		10					Gloomy	H.E. Bellamy.
Plymouth	29.85	758.2	29.93	760.2	45.5	7.5		W			3		10					Rain and fog	John Merrifield.
Roche's Point	29.97	761.2	30.02	762.5	48	8.9		NNW			6		8					Squally	W. Kennedy.
Saint Ann's Head	29.72	754.9	29.88	758.9	46	7.8		NW			6		10					Overcast	John C. Walker.
Sandwick Manse, (Orkneys.			29.61	752.1	41.1	5.1		WNW	37	16.5			8					Snowing	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey			29.95	760.7	68.8	20.4		Calm			0		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.46	748.3	29.74	755.4	44.2	6.8		SSW			1		6			0	0	D. clouds	W. F. Cooper.
Silloth, Rectory	29.73	755.1	29.76	755.9	44.4	6.9	84	NW			5		10			0	0	Overcast	C. Edith Redford.
Stonyhurst, Observatory	29.35	745.5	29.36*	745.7*	42.5	5.8		WNW			3		8					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.63	752.6	29.85	758.2	44.0	6.7		W			1		8					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso	29.61	752.1	29.67	753.6	38	3.3		NNW			6		4					D. clouds	John Trotter.
Truro, Royal Institution			29.97	761.2	52	11.1		NW			8		10					Raining	W. Newcombe.
Valencia, Observatory	30.07	763.8	30.10	764.5	51.3	10.7		NW	18	8.0			5			Blank	Blank	D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.62	752.3	55.0	12.8	83	SW			2		0			0.05	1.3		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.87	758.7	30.06	763.5	75.8	24.3	74	ENE	17.5	7.8		0	10		ENE	0.35	8.9	Squally	C. Meldrum.
Melbourne, Observatory	29.62	752.3	29.71	754.6	64.0	17.8	72	NE	6	2.7			10			0	0	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m. *Prabably 29.76 in. or 755.9 mm.

MARINE SERIES. VESSELS.	Barometer corrected, Inches.	Millimeters.	Reduced, Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind from—	Miles per hour.	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper from—	Lower from—	Sea or swell. Height scale 0-9	Direction from—	Weather.	Observer.
Brig Catherine, N. 46° 45', W. 44° 20'			29.50	749.3	52	11.1		NW			2		8			5	ENE	Raining	Capt. Alex. Wilson.
Barque Commewyne, N. 31° 30', W. 41° 20'			30.01	762.2	77	25.0		NW			4		3			3	NW	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle, N. 46° 20', W. 38° 5'			29.58	751.3	62	16.7		ESE			3		8			4	ENE; SE	Misty	Capt. W. Waring.
Barque Margaret Smith																			Capt. D. W. A. Quaile
Schooner Traveller																			Capt. Alex Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas																			Mr. Ansart.
San José	26.17	664.7	29.89	759.2	67.6	19.8	98	NW			2		9s		NW	0.88	22.4		Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,146 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.41	746.9	29.45	748.1	46.4	8.0	68	SSW			6		9						
Faröe	29.23	742.4	29.25	742.9	43.7	6.5	94	S			6		9						Raining
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	29.67	753.6	29.71	754.5	36.1	2.3	79	N			6		7						Snowing
Vestervig	29.18	739.9	29.30	744.2	45.0	7.2	89	SE			4		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.49	749.0	30.04	763.0	46.6	7.8	91	NW			4		10			0.020	0.5	Covered	Collignon, Director.
Amiens, Normal School	29.71	754.6	29.82	757.4	50.4	10.2	72	WNW			2		8		NE	0.205	5.2	Very cloudy	Bonvallet, Director.
Avignon, Normal School	29.92	760.0	30.00	762.0	56.3	13.5	45	N			2		0			0	0	Very clear.	M. Giraud, Director.
Bar-sur-Seine	29.33	744.9	29.89	759.2	48.2	9.0	69	WSW			3		8kn			0.008	0.2	Very cloudy	C. Saillard.
Beauvais, Normal School	29.58	751.4	29.87	758.7	47.7	8.7	81	W			1		10		NW	0.413	10.50	Covered	Frere Eugene Marie, Director.
Besançon, Normal School	29.04	737.5	29 94	760.5	47.3	8.5	83	S			6		10		SW	0.303	7.7	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	29.15	740.4	30.07	763.6	47.1	8.4	75	SW			3		5ok		SW	0.24	6.	Cloudy	M. Marlot, Director.
Bourges, Normal School	29.41	747.1	29.97	761.2	50.0	10.0	86	SW			3		5k		SW	0	0	Cloudy	A. Waquet, Director.
Brest, Naval Observatory	29.77	756.2	30.02	762.4	53.6	12.0	73	W			3		10		W	0.020	0.50	Hail-squalls	M.de Rermaur, Director.
Carcassonne, Normal School	29.68	753.8	30.10	764.5	55.0	12.8	65	W			3		5	W	W	0	0	Cloudy	Septembre, Director.
Caen	29.80	756.9	29.87	758.8	46.0	7.8	80	NW			1		8		NNW	0	0	Very cloudy	M. Lair, Director.
Chartres, Normal School	29.32	744.7	29.90	759.4	42.8	6	91	W			2		10		E	0.098	2.5	Covered	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.52	749.9	29.85	758.1	47.8	8.8	71	WSW			2		8k		SW	0	0	Very cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.65	727.8	30.02	762.4	51.4	10.8	46	W			1		8		WNW	0	0	Very cloudy	Alluard, Director.
Commercy, Normal School	29.01	736.9	29.91	759.6	43.7	6.5	58	W			1		10n		W	0.39	10.	Raining	Dr. Coulet, Director.
Commune de Grèasque*	28.84	732.5	29.98	761.5	52.3	11.3	46	NW			6		2	NW		Inap.	Inap.	Light rain	M. Kina.
Grenoble, Normal School	29.19	741.5	29.97	761.2	49.6	9.8	79	E			1		5k		E	0	0	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.87	758.8	30.10	764.4	53.6	12.0	63	N			3		5		N	0.020	0.5	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.07	738.7	29.98	761.6	46.8	8.2	78	NW			3		8		NW	0.067	1.7	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.08	738.0	29.98	761.6	48.7	9.3	79	SW			3		8		SW	0.244	6.20	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	29.98	761.5	30.08	764.0	50.4	10.2	74	WNW			2				NW	0.079	2.0		Lt T. Carré, Director.
Mâcon, Normal School	30.08	764.0	30.11	764.8	45.1	7.3	86	S			3		10			0.16	4.	Covered	M. Galxin, Director
Mirecourt, Normal School	28.85	732.7	29.90	759.4	43.2	6.2	88	SSW			3		5k		SE	0.12	3.	Raining	M. Barbier, Director.
Nismes, Normal School	29.84	757.8	30.04	763.0	56.8	14.6	35	N			4		2		NW	0	0	Slightlycl'dy	Boyer, Director.
Privas, Normal School	28.99	735.6	30.04	762.9	51.8	11	44	N			3		10	N	N	0	0	Lightly cov.	M. Cantier.
Puy de Dome (Summit)	25.04	635.9			30.6	— 0.8	100	NW			6		8			0.181	4.6	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.07	763.6	30.10	764.4	54.0	12.2	86	NW			1		8	NW	NW	0.28	7.	¾ Covered	Lt. Decante, Director.
Rouen, Normal School	29.77	756.2	29.86	758.4	46.0	7.8	72	W			1		10		W	0.339	8.6	Covered	Frere Lucard, Director.
Saint Malo (Port)			29.97	761.1	47.1	8.4	70	WNW			6		8		NW	0.297	7.55	Raining	M. H. Hercouet.
Saint Maur, (near Paris)	29.72	754.8	29.88	759.0	47.7	8.7	76	W			2-3		10		W	0.091	2.3		E. Renou.
Tarbes, Normal School	28.98	736.2	30.07	763.6	53.6	12	76	SSW			4		2	WSW	W	0.24	6.	Slightlycl'dy	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.30	744.3	30.02	762.6	50.9	10.5	62	NW			3		8		NE	0.43	11.	Very cloudy	M. Gausserand, Director.
SUB-SERIES.																			
Fort de France, Martinique	29.89	759.1	29.91	759.8	81.3	27.4										2.1	53.		L'Abbé Marchés.
Lyons, Observatory			30.05	763.2	46.8	8.2	83						5			0.039	1.0		
Marseilles, Observatory			29.96	761.0	57.2	14.0	40	NW			2-3		2			0	0	Partly cl'dy	The Staff.
Mont-Louis	24.81	630.2	30.13	765.2	46.0	7.8	44	SSW			2		2		W	0	0		M. Cave.
Nice			29.82	757.3	61.2	16.2	61	WSW			2		0			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.59	751.6	29.87	758.6	46.9	8.3	75	WSW			4		10			0.039	1.0		Marié-Davy, Director
Perpignan			30.06	763.4	55.9	13.3	48	NE	24.2	10.83			3		NW	0	0		Dr. Fines.
Pic du Midi, (Summit,) H. P																			M. Baylac.
Pic du Midi, (Plantade,) H. P	22.46	570.6			25.3	— 3.7		SW			4		10			0.488	12.4	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.43	747.4	30.16	765.8	51.8	11.0	62	NW			3		9			0.187	4.75	Light rain	B. Baillaud.
Tours	29.70	750.0	29.96	761.0	49.6	9.8	70	SW			3		10		W	0.165	4.2		C. Marquet.
Versailles			29.89	759.2	43.2	6.2	70	NW			2		10			0.191	4.86	Raining	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.37	771.5	30.40	772.2	43.7	6.5	100	NW	2.9	1.3			1			0	0	Clear.	Marie Deschevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 305 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added For Macon the barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–12.	Clouds. Amount. Up'er 0–10	Clouds. Amount. Low'r 0–10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.87	733.4	29.71	754.6	46.8	8.2	71	W			6		8	W		0.08	2.	Raining	Prof. Dr. Hoh.
Berlin	29.48	748.8	29.65	753.1	50.5	10.3	60	S			3		4			0	0		Prof. Arndt.
Breslau	29.26	743.1	29.78	756.5	51.8	11.0	60	S			3		0			0.153	3.88		Royal University Obs'y
Carlsruhe	29.39	746.4	29.82	757.3	47.8	8.8	70	SW			3		10			0.087	2.2	Raining	Albert Senz.
Cassel	29.00	736.5	29.60	751.7	46.4	8.0	73	W			4		8	SW		0.081	2.06		Dr. H. Möhl.
Crefeld	29.44	747.8	29.60	751.9	44.6	7.0	85	SW			5		8			0.39	10.		Director Lose.
Emden	29.53	750.0	29.56	750.9	47.3	8.5	83	SW			4		5			0.087	2.2		Prof. Prestel.
Frankfort on the Main	29.38	746.3	29.75	755.6	48.2	9.		SSW			4		9			0.075	1.9		Physical Society.
Friedrichshafen	28.47	723.1	29.93	760.1	44.6	7.1	72	WSW			6		8	WSW		0.051	1.3	Showery	M. Wilhelm.
Hamburg	29.40	746.8	29.47	748.6	41.2	5.1	95	SSW			5		10n			0.091	2.3	Raining	Captain F. Hegemann.
Kiel	29.41	747.0	29.43	747.4	45 0	7.2	78	SW			6		10			0.035	0.90		Prof. G. Karsten.
Königsberg, (Prussia)	29.68	753.8	29.76	755.9	49.3	9.6	77	SW			4		4			0.067	1.7		Prof. E Luther.
Köslin			29.60	751.9	48.2	9.0		S			4		3			0	0		H. Müller.
Leipsic, Observatory	29.30	744.2	29.72	754.9	48.9	9.4	60	SW			4		7	WSW		0	0	Stormy	Prof. Bruhns, Sec. Counsel.
Memel, Naval School	29.68	753.9	29.73	755.1	50.9	10.5	72	SW			4		1k						Reinbrecht and Skalweit.
Neufahrwasser	29.72	754.8	29.73	755.2	47.5	8.6	83	SSW			3		3			0	0		A. Lothes.
Posen	29.45	747.9	29.74	755.3	50.9	10.5	82	SW			5		0			0	0		Dr. Magener.
Strassburg (in Alsace)	29.32	744.7	29.87	758.8	49.3	9.6	65	WSW			3		10	W		0.148	3.77		Imp. Astronomical Observatory
Stuttgart	28.86	733.1	29.81	757.1	47.8	8.8	59	W			2		8	W		0.008	0.2		Prof. Schoder.
Treves, (Trier)	29.23	742.5	29.75	755.6	46.2	7.9	76	W			7		10			0.129	3.54	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.32	719.4	29.81	757.1	45.3	7.4	62	WSW	5.4	2.4			7ck		W	0.102	2.6		Dr. Von Bebber.
Wustrow, Naval School	29.50	749.4	29.53	750.0	45.0	7.2	79	S			5		6ks			0	0		E. Schütz, Dir.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.5	30.01	762.2	76.5	24.7		SW			1.5							Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.44	747.7	29.91	759.7	85.0	29.4	19	NNE					0			0	0	Blue sky	
Bombay	29.73	755.2	29.77	756.2	83.5	28.6	66	NNW	20	8.9			3	WNW		0	0	D. clouds	
Poona	27.83	707.0	29.83	757.7	78.8	26.0	36	NE					5			0	0	D. clouds	
Lahore	29.15	740.4	29.90	759.6	74.8	23.8	37	Calm	1.8	0.8						0	0	Blue sky	
Belgaum	27.25	692.1	29.78	756 3	76.3	24.6	52	ENE	2	0.9			3	SE		0	0	D. clouds	
Roorkee	28.96	735.5	29.86	758.5	77.4	25.2	36	Calm					1			0	0		
Agra	29.31	744.5	29.88	758.9	80.7	27.1	28	W								0	0		
Nagpur	28.76	730.4	29.79	756.6	84.2	29.0	29	N	3.8	1.7			9		NE	0	0	Gloomy	
Lucknow	28.46	748.4	29.83	757.7	87.4	30.8	45	Calm	0.6	0.3						0	0	Blue sky	
Allahabad	29.54	750.2	29.85	758.2	77.4	25.2	71	Calm	0.8	0.4			4			0	0	D. clouds	
Patna	29.69	754.1	29.87	758.7	78.9	26.1	74	Calm	0.4	0.2			4	E	E	0	0	D. clouds	
Hazaribagh	27.84	707.0	29.83	758.5	74.6	23.7	70	SE	3.0	1.3			9			0	0		
Cuttack	29.73	755.2	29.82	757.3	74.0	23.3	83	NE	4.6	2.1			9			1.14	29.0	Raining	
Calcutta (Alipore)	29.83	757.6	29.85	758.2	79.0	26.1	87	N	2.0	0.9			10			0	0	Overcast	
Goalpara	29.46	748.2	29.85	758.1	79.0	26.1	69	ENE	7.9	3.5			6	SW		0	0	D. clouds	
Chittagong	29.76	755.8	29.85	758.2	78.9	26.1		Calm	2.8	1.2			4			0	0	Misty	
Sibsagar	29.54	750.3	29.88	758.9	74.2	23.4	78	NE	1.3	0.6			10			0	0	D. clouds	
Jubbulpore	28.49	723.6	29.86	758.4	77.5	25.4	45	E	2.9	1.3			5			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.43	747.6	29.84	757.9	54.9	12.7	60	E	2.5	1.1	.....	.....	2	.....	.....	0.165	4.2	.....	Prof. Giovanni Clodig.
Padua	29.71	754.6	29.82	757.4	57.9	14.4	55	NE	3.8	1.7	.....	.....	3	N	.....	0	0	.....	Prof. Dott. Lorenzoni
Vicenza	29.63	752.5	29.82	757.5	57.9	14.4	53	E	1.3	0.6	.....	.....	2	W	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.48	723.5	29.81	757.1	55.8	13.2	47	SW	.....	.....	1	.....	3	.....	.....	0.063	1.6	.....	Prof. Trionfini Carlo.
Milan	29.29	743.9	29.80	757.0	55.2	12.9	70	SE	.....	.....	2	.....	2	SW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.90	734.0	29.81	757.1	54.3	12.4	53	SE	3.8	1.7	.....	.....	0	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.89	708.3	29.79	756.6	51.3	10.7	42	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.58	751.3	29.80	756.9	61.9	16.6	69	ENE	.....	.....	4	.....	4	W	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.63	752.7	29.80	757.0	57.4	14.1	77	N	3.8	1.7	.....	.....	10	W	.....	0.461	11.7	.....	Prof. G. M. Garibaldi.
Parma	29.52	749.7	29.83	757.6	55.2	12.9	77	NW	.....	.....	2	.....	9	.....	.....	0	0	.....	Prof. P. Pigorini.
Florence	29.57	751.1	29.82	757.5	61.7	16.5	66	N	.....	.....	2	.....	6	W	.....	0.059	1.5	.....	Cav. F. Meucci.
Leghorn	29.72	754.8	29.80	756.9	60.8	16.0	70	SW	1.8	0.8	.....	.....	7	W	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.76	755.9	29.81	757.2	59.7	15.4	68	NW	6.3	2.8	.....	.....	8	.....	.....	0.276	7.0	.....	Prof. Luigi Guidi.
Urbino	28.28	718.3	29.82	757.3	56.5	13.6	61	SW	.....	.....	2	.....	5	.....	.....	0.374	9.5	.....	Prof. P. Serpieri
Rome	29.69	754.1	29.86	758.5	66.0	18.9	62	SSW	9.8	4.4	.....	.....	10	.....	.....	0	0	.....	Prof. P. G. S. Ferrari.
Naples, O. U.	29.70	754.3	29.90	759.4	63.5	17.5	75	NNE	.....	.....	4	.....	10	SW	.....	0.114	2.9	.....	Prof. L. Palmieri.
Lecce	29.61	752.0	29.86	758.3	74.7	23.7	70	SW	21.7	9.7	.....	.....	9	S	.....	0.079	2.0	.....	Prof. C. De Giorgi.
Cagliari	29.72	754.9	29.91	759.7	63.1	17.3	49	W	.....	.....	4	.....	10	NW	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.03	737.3	29.89	759.2	78.1	25.6	71	SW	0	0	.....	.....	7	.....	.....	0	0	.....	Prof. F. D. Conti.
Palermo	29.66	753.0	29.89	759.3	71.8	22.1	64	NE	4.3	1.9	.....	.....	9	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	29.85	758.2	29.92	760.0	75.6	24.2	74	SW	9.8	4.4	.....	.....	8	WSW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.96	761.0	30.16	766.0	48.3	9.1	83	N	1.1	0.5	.....	.....	0	.....	.....	0	0	Very clear...	I. Arai, Director.
Tokei (Yeddo) Observatory	29.82	757.4	29.89	759.2	53.8	12.1	65	NNW	4.9	2.2	.....	0	0	.....	.....	0	0	Fair.....	
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. T. C. Mendenhall.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the cooperation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	66.5	17.5	61	N	.....	.....	4	0	0	.....	.....	0	0	Clear.....	P. Ceballos.
Guadalajara	26.06	686.5	30.14	765.5	51.8	11.0	69	SW	.....	.....	1	.....	10	.....	.....	0	0	Misty.....	Prof. L. Perez.
Leon	24.41	620 2	29.97	761.4	59.0	15.0	86	SSW	.....	.....	1	0	0	.....	.....	0	0	Blue sky.....	Prof. M. Leal.
Mexico	23.09	586.6	30.15	765.7	51.1	10.6	88	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear.....	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	55.4	13.0	81	SSW	.....	.....	1	0	0	.....	.....	Inap.	Inap	Clear.....	M. V. de Leon, M. E.
Tlacotalpam	29.87	758.7	29.88	759.0	72.1	22.3	91	S	.....	.....	1	0	0	.....	.....	0	0	Foggy	M, M. Chazaro.
San Luis Potosi	24.17	613.0	30.14	765.6	52.0	11.1	44	SE	.....	.....	.....	0	4	.....	SE	0	0	⅛ cloudy....	G. Barroeta. M D.
Vera-Cruz	29.93	760 3	29.96	761.0	78.4	23.0	80	NW	.....	.....	.....	c	2k	N	.....	0	0	Foggy	Prof. J. Rossell.
Zacatecas	22.58	573.9	30.19	766.9	55.5	13	87	SSW	.....	.....	1	0	0	.....	.....	0	0	Blue sky.....	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.28	591.4	30.04	763.2	49.3	9.6	67	ESE	.....	.....	.....	0	1	.....	Calm	1 220	31.00	Clear.....	Prof. P. Spina.
Durango	24.17	613.8	30.02	762.4	58.0	14.4	81	NW	.....	.....	1	0	0	.....	.....	0	0	Clear.....	M. V. de Leon, C. E.
Colima	28.31	719.1	29.96	761.1	77.0	25.0	71	E	0.8	0.4	.....	0	0	.....	.....	0	0	Clear.....	R. Banda, C. E.
San Juan E. Michapam	29.83	757.7	29.98	761.4	74.3	23.5	.....	NW	.....	.....	.....	0	0	.....	.....	0.166	4.2	Dense fog....	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,589.3 m., or 5,148.5 ft. Leon, 1,774 m., or 5,820 ft., Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.3 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the cooperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.70	754.4	29.70	754.4	48.2	9.0	.....	WNW	.....	.....	5	.....	.....	.....	.....	0.197	5.0	.....	
Groningen	29.41	747.1	29.47	748.5	45.7	7.6	.....	W	.....	.....	2	.....	.....	.....	.....	0.322	8.2	.....	
Helder	29.51	749.5	29.51	749.5	48.2	9.0	.....	NW	.....	.....	6	.....	.....	.....	.....	0.299	7.6	.....	
Hellevoetsluis	29.64	752.9	29.64	752.9	42.8	6.0	95	WNW	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.54	750.3	29.82	757.5	40.6	8.1	81	W	.....	.....	2	.....	10	.....	.....	0.587	14.9	Dull.....	H. v.d Broek.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as cubasheet, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru'tal error and temperature. Inches.	Barometer. Corrected for instru'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.24	742.7	29.30	744.1	41.7	5.4	82	NNW	4.5	2.0	.....	.....	8	.....	.....	0.016	0.4	.....	
Brönö	29.51	749.5	29.55	750.5	44.6	7.0	66	Calm	0	0	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.24	742.7	29.39	746.4	45.1	7.3	91	ENE	9	4	.....	.....	10	.....	.....	0.303	7.7	Light rain...	
Tromsö	29.63	752.5	29.67	753.6	31.6	—0.2	85	ENE	4	2	.....	.....	0	.....	.....	0	0	.....	

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.85	758.3	30.04	763.1	64.4	18.0	92	S	8.7	3.9	.....	.....	10	.....	.....	0.591	15.0	.....	Dr. J. A. Sampaio.
Campo Major	29.16	740.6	30.19	766.7	61.3	16.3	45	NNE	6.9	3.1	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	30.01	762.3	30.10	764.5	68.7	20.4	49	ENE	8.1	3.6	.....	.....	5	.....	.....	0.008	0.2	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.82	757.4	30.18	766.5	61.0	16.1	51	NE	22.4	10.0	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	30.06	763.4	30.13	765.2	63.7	17.6	90	S	25.3	11.4	.....	.....	10	.....	.....	0.150	3.8	Light rain...	

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h., 6 m., p. m.

Naval Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from —		
Bartholomew Dias	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Thomas, Gulf of Guinea	.....	.....	D. clouds.....	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	I. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 13° 46', W. 20° 29'	.....	.....	D. clouds.....	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	M. T. Guimaraes, Com'd't.
	.....	.....	.....	
	.....	.....	.....	
	.....	.....	.....	

Note.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.39	746.4	29.81	757.2	50.9	10.5	84	WNW	2	1	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.39	746.5	29.80	757.0	50.0	10.0	80	SW	2	1	.....	.....	3	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Dorpat	29.42	747.2	29.66	753.4	49.3	9.6	84	SSW	9	4	.....	.....	5ck;k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.56	750.8	29.68	751.2	48.6	9.2	93	W	13	6	.....	.....	10n	.....	.....	.....	.....	Raining	Central Physical Obs.
Kieff	29.22	742.2	29.85	758.1	56.3	13.5	87	SSE	13	6	.....	.....	10ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.94	760.4	30.01	762.2	65.1	18.4	74	S	13	6	.....	.....	4k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.06	763.6	30.08	764.1	65.7	18.7	91	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.40	746.8	29.95	760.7	55.0	12.8	73	SW	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.95	760.6	30.15	765.8	52.3	11.3	85	E	13	6	.....	.....	9	.....	.....	.....	.....	Dense fog....	Meteorological Obs.
Archangel	29.67	751.1	29.59	751.6	43.7	6.5	98	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sselwerstow.
Tiflis	28.72	729.6	30.12	765.1	66.4	19.1	56	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.39	772.0	30.31	769.9	53.4	11.9	59	ESE	7	3	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Krotkowo*	29.00	736.5	30.26	768.5	49.6	9.8	45	S	9	4	.....	.....	4s	.....	.....	.....	.....	Light clouds	Cand. Fatjanow.
Kasan	29.94	760.4	30.21	767.4	49.1	9.5	56	SSE	9	4	.....	.....	6	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Ekaterinburg	29.24	742.7	30.23	767.7	43.3	6.3	56	W	7	3	.....	.....	7c;cs	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.01	762.3	30.25	768.4	41.4	5.2	51	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	
Tashkend	28.71	729.2	30.47	773.9	46.8	8.2	63	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.69	754.1	30.24	768.0	35.4	1.9	75	SSW	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Yeniseisk	29.65	753.1	29.95	760.7	34.0	1.1	88	WSW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Marks.
Peking, (China)	30.12	765.0	30.26	768.6	43.0	6.1	69	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.00	736.5	29.08	738.7	34.0	1.1	100	N	11	5	.....	.....	10n	.....	.....	.....	.....	Snowing.....	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 396 meters, or 1,300.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47', E. 48° 34'.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.93	760.2	30.04	762.9	59.0	15.0	52	WSW	1.5	0.67	.....	.....	0	.....	.....	0	0	Clear.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.16	766.0	30.22	767.5	54.9	12.7	91	W	1.4	0.65	.....	.....	10	.....	.....	0.693	17.6	Raining.....	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.23	691.7	.....	.....	51.1	10.6	78	N	4.8	2.14	.....	.....	6	.....	.....	0	0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.93	709.4	30.17	766.3	57.5	14.1	61	SE	0.7	0.33	.....	0	0	.....	.....	0	0	Clear.	The Staff.
Murcia, Met. Obs'y	29.97	761.2	30.12	765.0	67.6	19.8	53	NNE	0.4	0.17	.....	.....	1	.....	.....	0	0	Clear.....	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.34	745.2	30.24	768.1	56.7	13.7	65	NE	10.8	5.28	.....	.....	8	.....	.....	0	0	Almost cov'd	L. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.1	29.99	761.8	73.4	23.0	90	E	4.7	2.1	.....	0	0	.....	.....	* 0	0	Clear.....	Benito Vines, S. J.
Manilla, Philippine Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.99	761.7	30.09	764.2	67.5	19.7	68	ENE	15.9	7.1	.....	0	10	.....	E	0.089	2.3	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.89	759.1	29.98	761.4	81.3	27.4	84	E	0	0	.....	6kn?	6kn	E	E	1.575	40.00	Overcast.....	Leonardo de Toledo, Ch'f Eng'r

Note.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 846 meters, or 2,621.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.61	752.2	29.65	753.2	32.0	0.0	.....	NE	.....	.....	4	.....	8	.....	.....	0	0	.....	
Umea	29.54	750.3	29.59	751.6	35.2	1.8	90	NE	.....	.....	4	.....	10	.....	.....	0.236	6.0	.....	
Hernosand	29.50	749.2	29.55	750.5	39.2	4.0	87	N	.....	.....	2	.....	10	.....	.....	0.020	0.5	Raining	
Stockholm	29.37	745.9	29.54	750.4	47.5	8.6	81	Calm	.....	.....	0	.....	10	.....	.....	0.244	6.2	.....	
Wisby	29.48	748.8	29.54	750.3	49.3	9.6	82	WSW	.....	.....	6	.....	5	.....	.....	0.012	0.3	.....	
Sub-Series.																			
Upsala	29.47	748.6	29.55	750.5	43.0	6.1	84	NE	.....	.....	.....	.....	6	.....	SW	0.071	1.80	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	725.0	29.99	761.8	47.1	8.4	54	S	.....	.....	2	.....	9	.....	.....	0.059	1.5	Covered	The Observatory.
Zurich	28.30	718.9	29.98	761.5	42.8	6.0	78	W	.....	.....	2	.....	8	.....	.....	0.071	1.8	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.1 mm.; Thermometer, —1.9 cent.; Relative Humidity, —20 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.01	762.3	68.9	20.5	55	S	4	2.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Valona	.....	.....	30.01	762.3	78.3	25.7	.....	S	.....	.....	3	.....	2	.....	.....	0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.89	759.2	30.00	762.1	75.9	24.4	61	NE	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.14	765.5	30.21	767.3	30.7	— 0.7	88	Calm	0	0	.....	2c	0	.....	.....	0	0	Fair	Hon. J. Ferguson.
Brockville, Ontario	29.85	758.2	30.16	766.1	35	1.7	.....	S	3	1.3	.....	.....	8s	.....	W	0	0	Cloudy	W. R. Bigg.
*Onatham, N. B	30.15	765.8	30.21	767.3	28	— 2.2	86	NW	2	0.9	.....	.....	10ks	.....	NW	0.04	1.0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.09	764.3	30.13	765.3	42	5.6	64	N	7	3.1	.....	0	5k	.....	Calm	0.070	1.78	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.94	760.7	30.14	765.5	29.8	— 1.2	93	SE	.....	.....	1	3cs	6s	W	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B	30.03	762.7	30.19	766.8	28.5	— 1.9	87	W	.....	.....	1	.....	.....	.....	.....	0	0	Cloudy	H. A. Johnson
Esquimault, B. C	30.19	766.8	30.24	768.1	46.3	7.9	100	Calm	.....	.....	.....	4cs	0	.....	.....	0	0	Fair	W. H. Bevis.
*Father Point, Quebec	30.16	766.1	30.18	766.6	32	0.0	79	NW	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	J. McWilliams.
Fredericton, N. B	30.18	766.6	30.25	768.3	28.0	— 2.2	83	W	5	2.2	.....	9cs	0	.....	.....	0	0	Cloudy	Prof. Harrison.
*Fort Garry Manitoba	29.66	758.1	29.94	760.5	18	— 7.8	84	SE	7	3.1	.....	5k	5ks	SE	SE	0	0	Cloudy	James Stewart.
Granton, Ontario	28.93	734.8	30.08	764.0	31	— 0.6	.....	Calm	.....	.....	0	2cs	0	.....	.....	0	0	Fair	James Grant.
*Halifax, N. S	29.98	761.5	30.12	765.0	39	3.9	88	NW	8	3.6	.....	0	2ks	.....	NW	Inap.	Inap.	Fair	F. Allison, M. A.
Hamilton, Ontario	29.75	755.6	30.14	765.5	31.1	— 0.5	89	SW	.....	.....	2	8ck	0	SW	.....	0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	29.86	758.4	29.88	758.9	46	7.8	92	NW	.....	.....	2	.....	10	.....	.....	0.05	1.3	Cloudy	E. Weedon.
*Kingston, Ontario	29.80	756.9	30.15	765.8	38	3.3	78	E	4	1.8	.....	.....	10ks	.....	S	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S	30.07	763.8	30.11	764.8	45.7	7.6	71	N	8	3.6	.....	6k	0	N	.....	0	0	Fair	C. H. Rigby.
*Montreal, Quebec	29.98	761.5	30.19	766.9	30	— 1.1	86	E	7	3.1	.....	8k	2ks	NW	.....	0	0	Cloudy	C. H. McLeod, C. E
*Parry Sound, Ontario	29.29	744.0	30.00	762 0	34	1.1	90	SE	8	3.6	.....	2k	8ks	SW	SW	0.07	1.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.35	745.5	30.13	765.3	32.5	0.3	89	SW	.....	.....	0	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, B. A.
Port Dover, Ontario	29.39	746.5	30.10	764.5	40	4.4	84	S	13	5.8	.....	10k	0	SW	.....	0	0	Fair	H. Morgan.
Port Hastings, N. S	30.02	762.5	30.08	764.0	45.3	7.4	.....	NW	5	2.2	.....	.....	.....	.....	.....	0	0	Fine	Peter Grant.
Port Stanley, Ontario	29.42	747.3	30.08	764.0	42	5.6	66	S	8	3.6	.....	.....	10ks	.....	SW	0	0	Cloudy	M. Payne.
*Quebec, Quebec	29.90	759.4	30.24	768.1	28	— 2.2	88	NW	.....	.....	.....	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N
*Rockliffe, Ontario	28.66	750.8	30.04	763.0	32	0.0	79	E	6	2.7	.....	.....	8s	.....	W	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.15	765.8	30.20	767.1	20	— 1.7	77	NW	2	0.9	.....	2k	5ks	.....	NE	0	0	Cloudy	Dr. Gove.
St. John, N. B	30.02	762.5	30.19	766.8	32	0.0	79	N	9	4.0	.....	7k	0	.....	.....	0	0	Fair	G. Murdock, C. E.
*Saugeen, Ontario	29.27	743.4	30.00	762.0	36	1.7	73	S	13	5.8	.....	.....	10ks	.....	S	0.04	1.0	Cloudy	K. Stewart.
Stayner, Ontario	29.25	742.9	30.06	763.5	31	0.6	96	SE	5	2.2	.....	.....	10ks	.....	W	0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.75	730.2	30.08	764.0	30.0	— 1.1	97	W	3.0	1.3	.....	.....	9s	.....	.....	0.05	1.3	Cloudy	C. J. MacGregor, M.
*Sydney, C. B	30.03	762.7	30.07	763.8	45	7.2	68	N	11	4.9	.....	8k	1ks	SW	N	0	0	Fair?	T. C. Hill.
*Toronto, Ontario	29.72	754.9	30.12	765.0	33	0.6	83	NW	1	0.4	.....	.....	10ks	.....	SW	0	0	Cloudy.	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	46	7.8	84	W	.....	.....	.....	0	2k	.....	.....	0.02	0.5	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,075 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	BAROMETER. Corrected for instrumental error and temperature. Inches.	BAROMETER. Corrected for instrumental error and temperature. Millimeters.	BAROMETER. Reduced to sea-level. Inches.	BAROMETER. Reduced to sea-level. Millimeters.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Upper. 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Upper. From—	CLOUDS. Direction. Lower. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	WEATHER.	OBSERVER.
Albany, New York	30.00	762.0	30.24	768.1	35	1.7	75	NW	1	0.4	.....	5ck	Fog	SW	.....	0	0	Fair	
Alpena, Michigan	29.23	742.4	29.89	759.2	34	1.1	79	SW	10	4.5	.....	5cs	5s	SW	Calm	0	0	Cloudy	
Atlanta, Georgia	28.98	734.8	30.10	764.5	47	8.3	92	E	8	3.6	.....	.....	10s	.....	SE	0.03	0.8	Cloudy	
Atlantic City, New Jersey	30.23	767.8	30.24	768.1	37	2.5	80	W	3	1.3	.....	8c	0	W	.....	0	0	Fair	
Augusta, Georgia	29.97	761.2	30.16	766.1	56	13.8	93	Calm	0	0	.....	.....	10s	.....	E	Inap.	Inap.	Threatening	
Baltimore, Maryland	30.21	767.3	30.26	768.6	39	3.9	64	N	2	0.9	.....	2cs	Haze	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	30.21	767.3	30.24	768.1	42	5.6	88	N	6	2.7	.....	8c	0	W	.....	0	0	Fair	
Bismarck, Dakota	27.85	707.4	29.71	754.6	27	— 2.8	88	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Boerne, Texas	28.47	723.1	.....	.....	54	12.2	93	SW	2	0.9	.....	.....	10s	.....	Calm	.0	0	Cloudy	
Boise City, Idaho	27.28	692.9	30.24	768.1	33	0.6	69	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	30.11	764.8	30.27	768.8	36	2.2	66	NW	5	2.2	.....	8c;cs	Haze	W	Calm	0	0	Fair	
Brackettville, Texas	28.78	731.0	29.81	757.2	56	13.3	75	Calm	0	0	.....	10cs	0	S	.....	0	0	Cloudy	
Breckenridge, Minnesota	28.76	730.5	29.79	756.7	25	— 3.9	87	NW	1	0.4	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.93	760.2	30.00	762.0	56	13.3	94	Calm	0	0	.....	.....	10s	.....	Calm	Inap	Inap.	Cloudy	
Buffalo, New York	29.40	746.7	30.12	765.0	37	2.8	71	S	12	5.4	.....	2k	5s	W	W	0	0	Fair	
Burkes, Arizona	.....	.....	.....	.....	51	10.6	28	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Burlington, Vermont	29.99	761.7	30.26	768.6	36	2.2	71	S	4	1.8	.....	5cs;ck	2s	Calm	Calm	0	0	Fair	
Cairo, Illinois	29.05	753.1	30.05	763.3	43	6.1	60	E	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Camp Apache, Arizona	24.61	625.1	29.61	752.1	23	— 5.0	60	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.11	637.8	29.91	759.7	48	8.9	43	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	26.76	679.7	30.24	768.1	31	— 0.6	38	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	
Campo, California	27.44	697.0	30.01	762.2	23	— 5.0	60	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	30.20	767.1	30.20	767.1	59	15.0	76	NE	16	7.2	.....	2k	2s	SW	NE	0	0	Fair	
Cape Henry, Virginia	30.20	767.1	30.23	767.8	52	11.1	60	NE	6	2.7	.....	5ck	5s	SW	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	59	15.0	82	NE	22	9.8	.....	0	5ks	.....	NE	0	0	Fair	
Cape May, New Jersey	30.23	767.8	30.26	768.6	41	5.0	74	N	4	1.8	.....	8cs	0	SW	.....	0	0	Fair	
Castroville, Texas	29.15	740.4	29.86	758.4	57	13.9	81	W	4	1.8	.....	.....	10s	.....	W	0	0	Threatening	
Charleston, South Carolina	30.11	764.8	30.14	765.5	60	15.6	94	NE	7	3.1	.....	.....	10s	.....	NE	0	0	Cloudy	
Cheyenne, Wyoming	23.92	607.6	29.56	758.4	36	2.2	71	N	16	7.2	.....	0	8s	.....	N	0	0	Cloudy	
Chicago, Illinois	29.20	741.7	29.90	759.4	39	3.9	55	S	12	5.4	.....	5cs	0	W	.....	0	0	Fair	
Cincinnati, Ohio	29.46	748.3	30.14	765.5	34	1.1	90	SE	2	0.9	.....	1k	Fog	W	Calm	0	0	Foggy	
Cleveland, Ohio	29.35	745.5	30.10	764.5	32	0.0	69	S	7	3.1	.....	5ck	0	SW	.....	0.01	0.3	Fair	
Coleman City, Texas	28.07	713.0	29.77	756.1	40	4.4	73	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Columbus, Ohio	29.24	742.7	30.12	765.0	31	— 0.6	79	SE	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Concho, Texas	28.96	735.6	29.72	754.9	42	5.6	83	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	29.48	748.8	29.86	761.0	44	6.7	92	E	3	1.3	.....	.....	10s	.....	Calm	1.00	25.4	Cloudy	
Davenport, Iowa	29.25	742.9	29.90	759.4	39	3.9	63	SW	4	1.8	.....	4cs	Haze	W	Calm	0	0	Fair	
Decatur, Texas	28.82	732.0	30.00	762.0	43	6.1	92	SE	2	0.9	.....	.....	Fog	.....	Calm	0.20	5.1	Foggy	
Denison, Texas	29.12	739.6	29.94	760.5	40	4.4	91	E	4	1.8	.....	.....	10s	.....	E	0.15	3.8	Cloudy	
Denver, Colorado	24.68	626.9	29.90	759.4	45	7.2	39	NW	6	2.7	.....	.....	8s	.....	Calm	0	0	Cloudy	
Des Moines, Iowa	28.95	735.3	29.84	757.9	39	3.9	73	Calm	0	0	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Detroit, Michigan	29.35	745.5	30.04	763.0	39	3.9	64	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Dodge City, Kansas	27.24	691.9	29.55	750.6	37	2.8	81	W	6	2.7	.....	.....	10s	.....	W	0	0	Cloudy	
Dubuque, Iowa	29.14	740.1	29.85	758.2	39	3.9	73	SW	1	0.4	.....	.....	10s	.....	SW	0.03	0.8	Cloudy	
Duluth, Minnesota	29.15	740.4	29.84	757.9	30	— 1.1	78	Calm	0	0	.....	.....	10n	.....	W	0.12	3.0	Light snow	
Eagle Pass, Texas	29.15	740.4	29.90	759.4	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Eastport, Maine	30.16	766.1	30.22	767.6	31	—0.6	79	NW	12	5.4	.....	5ck	2s	W	N	0.05	1.3	Fair	
Edinburg, Texas	.....	.....	.....	.....	58	14.4	94	Calm	.....	.....	0	.....	10s	.....	S	0	0	Cloudy	
El Paso, Texas	.....	.....	.....	.....	54	12.2	47	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.38	746.2	30.12	765.0	36	2.2	61	SE	11	4.9	.....	10ck	0	W	.....	0	0	Cloudy	
Escanaba, Michigan	29.19	741.4	29.86	758.4	31	—0.6	89	N	4	1.8	.....	.....	10s	.....	N	0.11	2.8	Cloudy	
Florence, Arizona	28.44	722.4	30.04	763.0	43	6.1	28	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.48	647.2	29.54	750.3	30	— 1.1	48	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.13	638.3	30.09	764.3	57	13.9	38	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Fort Gibson, Indian Ter	29.40	746.7	29.95	760.7	40	4.4	91	SE	5	2.2	.....	.....	10s	.....	SE	0.05	1.3	Cloudy	
Fort Griffin, Texas	28.57	725.7	29.84	757.9	45	7.2	92	SE	12	5.4	.....	.....	10s	.....	Calm	0.23	5.8	Cloudy	
Fort McKavett, Texas	27.64	702.0	29.56	750.8	49	9.4	85	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	28.65	727.7	29.77	756.1	43	6.1	100	E	8	3.6	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Fredericksburg, Texas	28.14	714.7	29.69	754.1	55	12.8	87	S	5	2.2	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Galveston, Texas	29.87	758.7	29.92	760.0	55	12.8	100	N	12	5.4	.....	.....	10ks	.....	N	0.19	4.8	Cloudy	
Graham, Texas	28.78	731.0	29.84	757.9	46	7.8	92	S	7	3.1	.....	.....	10s	.....	S	0.12	3.0	Cloudy	
Grand Haven, Michigan	29.21	741.9	29.86	758.4	47	8.3	62	SW	20	8.9	.....	.....	10s	.....	SW	0.21	5.3	Cloudy	
Indianapolis, Indiana	29.26	743.2	30.07	763.8	34	1.1	70	SE	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
Indianola, Texas	29.94	760.5	29.96	761.0	53	11.7	93	N	11	4.9	.....	.....	10s	.....	N	0.04	1.0	Cloudy	
Jacksboro, Texas	28.72	729.5	29.86	758.4	44	6.7	92	SE	6	2.7	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Jacksonville, Florida	30.08	764.0	30.10	764.5	63	17.2	94	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Keokuk, Iowa	29.26	743.2	29.88	758.9	42	5.6	60	SW	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Key West, Florida	29.98	761.5	30.02	762.5	76	24.4	82	E	7	3.1	.....	2k	0	E	.....	0.10	2.5	Clear	
Kittyhawk, North Carolina	30.22	767.6	30.24	768.1	55	12.8	68	NE	14	6.3	.....	5ck	0	NW	.....	0	0	Fair	
Knoxville, Tennessee	29.12	739.6	30.16	766.1	39	3.9	91	NE	5	2.2	.....	10cs	8mo;fg	SW	NE	0	0	Cloudy	
La Crosse, Wisconsin	29.07	738.4	29.82	757.4	38	3.3	86	S	5	2.2	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	32	0.0	69	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.51	749.5	29.85	758.2	58	14.4	82	Calm	0	0	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Lead City, Dakota	24.62	625.3	29.89	759.2	33	0.6	89	NW	12	5.4	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Leavenworth, Kansas	29.02	737.1	29.88	758.9	40	4.4	65	S	4	1.8	.....	0	5ks	.....	SW	0	0	Fair	
Los Angeles, California	29.58	751.3	29.92	760.0	46	7.8	26	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.51	749.5	30.00	764.3	37	2.8	71	E	2	0.9	.....	8ck	Fog	SW	Calm	0	0	Fair	
Lynchburg, Virginia	29.64	750.3	30.24	768.1	40	4.4	72	E	1	0.4	.....	0	8ks	.....	Calm	0	0	Cloudy	
Madison, Wisconsin	28.84	732.5	29.83	757.7	39	3.9	65	SW	4	1.8	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Marquette, Michigan	29.10	739.1	29.83	757.7	28	— 2.2	66	W	5	2.2	.....	5c	2ks	W	Calm	0.11	2.8	Cloudy	
Mason, Texas	28.25	717.5	29.98	761.5	54	12.2	80	SW	8	3.6	.....	5k;hz	0	SW	.....	0	0	Fair	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.10	739.1	29.83	757.7	40	4.4	65	SW	10	4.5	.....	.....	10s	.....	SW	0	0	Cloudy	
Mobile, Alabama	29.96	761.0	30.00	762.0	54	12.2	93	N	6	2.7	.....	.....	10n	.....	E	0.02	0.5	Light rain	
Montgomery, Alabama	29.83	757.7	30.07	763.8	50	10.0	93	NE	3	1.3	.....	.....	10n	.....	Calm	0.30	7.6	Light rain	
Morgantown, West Virginia	29.08	738.6	30.18	766.6	30	— 1.1	78	SW	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Mt. Washington, N. H.	23.72	602.5	30.08	764.0	13	—10.6	81	NW	30	13.4	.....	8ck	0	NW	.....	0	0	Fair	
Nashville, Tennessee	29.55	750.6	30.10	764.5	43	6.1	75	Calm	0	0	.....	.....	10s	.....	S	0.01	0.3	Threatening	
New Haven, Connecticut	30.15	765.8	30.27	768.8	37	2.8	71	N	4	1.8	.....	5cs	0	Calm	.....	0	0	Fair	
New London, Connecticut	30.24	768.1	30.29	769.4	38	3.3	81	N	4	1.8	.....	3c;cs	2s	W;SW	SW	0	0	Fair	
New Orleans, Louisiana	29.86	758.4	29.91	759.7	61	16.1	88	E	11	4.9	.....	.....	10n	.....	Calm	0.24	6.1	Light rain	
Newport, Rhode Island	30.21	767.3	30.26	768.6	40	4.4	65	N	5	2.2	.....	10c;k	0	W	.....	0	0	Cloudy	
New York, New York	30.08	764.0	30.26	768.6	43	6.1	66	NE	6	2.7	.....	8cs	Haze	S	Calm	0	0	Hazy	
Norfolk, Virginia	30.19	766.8	30.25	768.3	49	9.4	71	NE	4	1.8	.....	8cs	0	SW	.....	0	0	Cloudy	
North Platte, Nebraska	26.91	683.5	29.52	749.8	34	1.1	60	NW	12	5.4	.....	5c	5s	NW	NW	0	0	Cloudy	
Olympia, Washington Ter.	30.24	767.8	30.27	768.8	38.3	3.5	100	SW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	28.65	727.7	29.75	755.6	42	5.6	83	N	2	0.9	.....	.....	10s	.....	NW	Inap.	Inap.	Cloudy	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.87	758.7	30.20	767.1	38	3.3	63	S	7	3.1	.....	2c	1s	W	W	0.36	9.1	Fair	
Pembina, Dakota	28.95	735.3	29.82	757.4	21	— 6.1	86	E	7	3.1	.....	.....	10n	....	Calm	Inap.	Inap.	Light snow.	
Philadelphia, Pa	30.22	767.6	30.27	768.8	41	5.0	65	NW	2	0.9	.....	2ck	5ks;fg	Calm	NW;calm	0	0	Cloudy	
Phœnix, Arizona	28.80	731.5	.....	.....	49	9.4	31	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.58	444.7	29.78	756.4	8	—13.3	78	NW	20	8.9	.....	.....	10s	.....	NW	0.01	0.3	Cloudy	
Ploche, Nevada	24.09	611.9	29.86	758.4	44	6.7	30	NW	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.32	744.7	30.17	766.3	30	— 1.1	89	NE	1	0.4	.....	.....	Fog	.....	Calm	0	0	Foggy	
Port Huron, Michigan	29.34	745.2	30.01	762.2	39	3.9	64	S	12	5.4	.....	8k	2ks	W	Calm	0.04	1.0	Cloudy	
Portland, Maine	30.18	766.6	30.23	767.8	38	3.3	72	Calm	0	0	.....	5k	Fog	Calm	.....	0	0	Fair	
Portland, Oregon	30.18	766.6	30.29	769.4	48.0	8.9	85	N	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
Prescott, Arizona	24.79	629.6	30.15	765.8	30	— 1.1	47	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.15	740.4	29.99	761.7	43	6.1	75	NE	1	0.4	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	70	21.2	85	NE	8	3.6	.....	5ck	0	Calm	.....	0.02	0.5	Fair	
Red Bluff, California	29.64	752.8	30.01	762.2	50	10.0	95	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.80	756.9	30.02	762.5	58	14.4	58	Calm	.....	.....	0	.....	10s	.....	Calm	0	0	Cloudy	
Rochester, New York	29.52	749.8	30.15	765.8	37	2.8	71	SW	2	0.9	.....	8ck	0	W	.....	0.01	0.3	Fair	
Roseburg, Oregon	29.6?	753.1	30.26	768.3	34.0	1.1	100	Calm	0	0	.....	0	Fog	.....	Calm	0	0	Clear	
Sacramento, California	29.91	759.7	29.99	761.7	47.5	8.6	67	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.42	747.3	30.01	762.2	34	1.1	79	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.06	763.5	30.07	763.8	60	15.6	94	E	4	1.8	.....	1ck	2s	SE	Calm	0	0	Fair	
St. Paul, Minnesota	28.94	735.1	29.78	756.4	33	0.6	79	N	2	0.9	.....	.....	10s	.....	Calm	0.11	2.8	Cloudy	
Salt Lake City, Utah	25.68	652.3	30.01	762.2	41	5.0	41	SE	2	0.9	.....	0	0	....	.....	0	0	Clear	
San Antonio, Texas	29.24	742.7	29.82	757.4	54	12.2	87	SW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Diego, California	29.88	758.9	29.95	760.7	50	10.0	26	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.43	747.5	30.12	765.0	37	2.8	63	SW	9	4.0	.....	5cs	0	W	.....	0	0	Fair	
Sandy Hook, New Jersey	30.22	767.6	30.25	768.3	44	6.7	76	E	12	5.4	.....	8cs	0	W	.....	0	0	Cloudy	
San Francisco, California	29.92	760.0	29.98	761.5	55	12.8	81	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.16	588.0	29.99	754.1	37	2.8	45	N	4	1.8	.....	0	0	....	.....	0	0	Clear	
Savannah, Georgia	30.03	762.7	30.13	765.3	63	17.2	100	NE	6	2.7	.....	.....	Fog	.....	Calm	0	0	Foggy	
Shreveport, Louisiana	29.75	755.6	29.97	761.2	46	7.8	92	N	3	1.3	.....	.....	10s	.....	Calm	0.40	10.2	Cloudy	
Silver City, New Mexico	24.25	615.9	.....	.....	35	1.7	44	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	30.16	766.1	30.19	766.8	57	13.9	94	N	8	3.6	.....	5cs	5s	S	N	0	0	Cloudy	
Springfield, Massachusetts	30.14	765.5	30.28	769.1	36	2.2	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.90	683.2	29.90	759.4	45	7.2	53	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.21	767.3	30.26	768.6	39	3.9	82	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Toledo, Ohio,	29.96	745.7	30.05	763.3	42	5.6	68	SE	11	4.9	.....	5c	0	NW	.....	0	0	Fair	
Tucson, Arizona	.....	.....	.....	.....	55	12.8	33	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.09	764.3	30.12	765.0	63	17.2	94	NE	16	7.2	.....	.....	10s	.....	NE	0	0	Threatning	
Umatilla, Oregon	29.81	757.2	.....	.....	39.0	3.9	77	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	34	1.1	100	Calm	.....	.....	0	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.06	738.1	29.87	758.7	57	13.9	75	Calm	0	0	.....	.....	10s	.....	NW	0	0	Cloudy	
Vicksburg, Mississippi	29.75	755.6	30.02	762.5	49	9.4	93	E	4	1.8	.....	.....	10s	.....	Calm	0.45	11.4	Light rain	
Virginia City, Montana	24.23	615.4	29.71	754.6	40	4.4	57	Calm	0	0	.....	.....	10s	.....	.....	0	0	Cloudy	
Visalia, California	29.66	753.4	30.03	762.7	43	6.1	84	E	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.16	766.1	30.28	769.1	33	0.6	89	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	33	0.6	82	N	.....	.....	1	0	Fog	.....	NW	0	0	Foggy	
Wilmington, N. Carolina	30.10	764.5	30.18	766.6	49	9.4	85	NE	6	2.7	.....	2cs	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	29	— 1.7	45	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	30.18	766.6	30.24	768.1	45	7.2	76	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yankton, Dakota	28.52	724.4	29.85	758.2	27	— 2.8	76	E	1	0.4	.....	8cs	0	NW	.....	0	0	Cloudy	
Yuma, Arizona	29.75	755.6	29.92	760.0	45	7.2	61	Calm	0	0	.....	5cs	0	W	.....	0	0	Fair	
SUB-SERIES.												0	0	.....	.....	0	0	Clear	
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A	29.89	759.2	29.94	760.5	10.0	—12.2	100	N	16	7.2	.....	.....	9s	.....	N	0.62	15.7	Snowing	J. Fortescue, W. Wood.
Fayettville, Ark	28.34	719.8	29.76	755.9	38	3.3	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. B. Gordon.
Havana, Cuba, W. I	29.97	761.2	29.99	761.7	76	24 4	86	E	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Bassenbrink.
Santiago de Cuba, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I	.....	.....	.....	.....	88	28.3	79	NE	5	2.2	.....	5c	5ks	E	.....	0	0	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I	30.09	764.3	30.10	764.5	78	25.6	90	Calm	0	0	.....	8c?	5n?	Calm	.....	0	0	.....	James Gall.
Navassa, W. I	29.85	758.2	29.93	760.2	83	28.3	.....	NE	8	3.6	.....	.....	.....	.....	.....	0	0	.....	.....
Paramaribo, D. Guiana, S. A	29.96	761.0	29.96	761.0	84	28.9	68	SE	.....	.....	3	0	5k	....	.....	0	0	Fair	F. M. Everett.
Medellin, Colombia, S. A	25.18	639.6	.....	.....	66.2	19.0	80	Calm	0	0	.....	5cs	2s	.....	.....	0	0	Fair	C. J. Herring
Portland, Jamaica, W. I	29.75	755.6	30.06	763.5	83	28 3	95	SE	.....	.....	.....	k	.....	.....	.....	0.11	2.8	.....	Thomas Herran.
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NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1181.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 4?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,893 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 538.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft;, or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayettville, Ark., 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 ?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 ?) m.; Fort Sill, 1,100 ?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.5 ft., or 313.3 m.; Medellin 4,870 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 ?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.32 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fé, 6.64 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.15	765.8	63	17.2	62.5	16.9	86	NE	5	2.2	.....	.....	10	.....	SW	1.22	31.0	.....	.....	Stormy.....	
Navy Yard, Portsmouth, N.H	30.17‡	766.37‡	.....	.....	34	1.1	71	NNW	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan	29.81*	757.2*	64	17.8	57	13.9	52	N	.....	.....	4	.....	0	.....	.....	0.21	5.3	.....	.....	Clear.....	
Adams. Valparaiso, Chili	29.96	761.0	59	15.0	59	15.0	88	NW	.....	.....	1	.....	1	.....	N; W	.....	.....	Smooth	.....	Fair.....	
Alaska. Payta, Peru	30.16	766.1	69	20.6	62	16.7	59	SE	.....	.....	1	.....	10	.....	SE	0	0	Smooth	.....	D. clouds.....	
Alliance. Smyrna, Turkey	30.02‡	762 5‡	.....	.....	73	22.8	59	W	.....	.....	0–1	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan	30.14	765.5	55	12.8	54	12.2	74	N	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Clear.....	
Canonicus. New Orleans, La.	29.95	760.7	48	8.9	62	16.7	88	E	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Colorado. New York, N. Y.	30.26‡	768.6‡	.....	.....	42	5.6	75	NNE	3	1.3	.....	.....	8	.....	SSW	0	0	.....	.....	Light fog....	
Constitution. Havre, France	.....	.....	.....	.....	44	6.7	100	WNW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Raining.....	
Despatch. Constantinople, Turkey	30.00‡	762.0‡	.....	.....	71	21.7	62	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Essex. Cape Town	30.24	768.1	63	17.2	63	17.2	94	WNW	.....	.....	4	.....	2	.....	NW	.....	.....	.....	.....	Clear.....	
Franklin. Norfolk, Va.	30.30	769.6	68	20.0	52	11.1	86	ENE	3.6	1.6	.....	.....	2	.....	W	0	0	.....	.....	Cloudy.....	
Gettysburg Jaffa, Syria	29.90‡	759.4‡	.....	.....	73	22.8	85	NNW	.....	.....	3	.....	2	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Guard. N. 18° 01′, W. 61° 32′	30.03	762.7	84	28.9	83	28.3	79	NE	.....	.....	5	.....	2	.....	NE	.....	.....	Smooth	.....	Clear.....	
Hartford. St. Catherine Strait	30.13	765.3	73	22.8	69	20.6	65	S	9.6	4.3	.....	.....	2	.....	SW	0	0	Smooth	.....	Fair.....	
Marion. N. 42° 30′, E. 9° 43′	29.81	757.2	66	18.9	66	18.9	68	NE	.....	.....	1	.....	5	.....	Calm	0	0	Smooth	.....	Fair.....	
Michigan. Erie, Pa.	30.09†	764.3†	.....	.....	36	2.2	70	SE	.....	.....	3	.....	8	.....	SW	.....	.....	.....	.....	Cloudy.....	
Monocacy. Yokohama, Japan	29.84‡	757.9‡	.....	.....	58	14.4	53	N	.....	.....	3	.....	2	.....	N	.....	.....	.....	.....	Fair.....	
New Hampshire. Port Royal, S. C.	30.28	769.1	65	18.3	64	17.8	89	NE	16	7.2	.....	.....	2?	.....	NE	0	0	.....	.....	Cloudy?.....	
Onward. Callao, Peru	30.04†	763.01	.....	.....	64	17.8	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos. Tientsin, China	30.38	771.6	78	25 6	41	5.0	91	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Passaic. Washington, D. C.	.....	.....	.....	.....	34	1.1	87	NE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Plymouth. Santa Cruz, W. I.	30.10	764.5	84	28.9	84	28.9	83	ENE	.....	.....	2	.....	10	.....	E	.....	.....	Smooth	.....	Rainy.....	
Powhatan. New York, N. Y.	30.24‡	768.1‡	.....	.....	44	6.7	76	NNE	4.2	1.9	.....	.....	5	.....	.....	0	0	.....	.....	Fair.....	
Quinnebaug. Norfolk, Va.	30.26‡	768.6‡	.....	.....	50	10.0	93	NE	.....	.....	1	.....	10	.....	WNW	.....	.....	.....	.....	Cloudy.....	
Ranger. Hong-Kong, China	30.23	767.8	78	25.6	77	25.0	73	E	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Rio Bravo. Brownsville, Texas	29.90	759.4	62	16.7	60	15.6	95	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Saranac. Annapolis, Md	30.24‡	768 1‡	.....	.....	42	5.6	83	NW	.....	.....	1	.....	5?	.....	.....	0	0	.....	.....	Cloudy?.....	
Saratoga. Philadelphia, Pa.	30.19	766.8	.....	.....	40	4.4	67	NE	.....	.....	1	.....	10	.....	W	0	0	.....	.....	Clear?.....	
St. Louis. League Island, Pa	30.13	765.3	54	12.2	41	5.0	83	NE	2	0.9	.....	.....	8	.....	NW	0	0	.....	.....	Fair.....	
Supply. Havre, France	29.86	758.4	52	11.1	50	10.0	58	NW	.....	.....	5–6	.....	5	.....	NW	.....	.....	.....	.....	Fair.....	
Trenton. Villafranca, France	29.87‡	758.7‡	.....	.....	71	21.7	55	WNW	.....	.....	1	.....	2	.....	W	0	0	.....	.....	Clear.....	
Vandalia. Villafranca, France	29.78‡	756.4‡	.....	.....	67	19.4	53	SSW	.....	.....	2	.....	2	.....	SSW	.....	.....	Mod'ate	SSW	Clear.....	
Wabash. Boston, Mass.	.....	.....	.....	.....	42	5.6	40	NW	5	2.2	.....	.....	5	.....	.....	0	0	.....	.....	Hazy.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4: weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level: corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, Hong-Kong China		30.14*	765.5*	74	23.3	95	NE			2		10		NE				Overcast	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Esquimault, B. C.		30.26*	768.6*	49	9.4	78	SW			1		4		SW	0			Cloudy	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

PACIFIC MAIL S. S. CO. MARINE SERIES.

Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic, N. 48° 29', W. 47° 19'		29.63*	752.6*	55	12.8	??	WNW			6		10		N	0	Heavy	NNE	Misty	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S Belgic, N. 32° 31', W. 146° 00'		29.98*	761.5*	70	21.1	57	SSW			4		ks		SW	0	Mod'ate	SSE	D. clouds	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andreasen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 49° 26', W. 8° 24'		30.07	763.8	54.0	12.2	65	NW			5		10		NNW	2 hours	4	N	Fair	Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.		Character.	Direction From—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 42° 36', W. 47° 14'		29.89	759.2	54	12.2	93	NNW			6		9		N	Light	Heavy	N	Cloudy	Captain Sargent.
S. S. Ohio. N. 48° 56', W. 44° 56'		29.52	749.8	56	13.3	94	SW			1		10		SW		Mod'ate	S	Light fog	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from. *Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 18° 31', W. 76° 10'		29.88	758.9	83	28.3	79	NE	2	0.9			5k		E	0.38 in or 9.7 mm.	Short sea		Cloudy	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Asst'd.) Chief Signal Officer. U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 30, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours	.....	.....	30.13	765.2	69.1	20.6	68	ESE	.....	.....	5	.....	1	.....	.....	0	0	Very fair.....	Kesxuche.
Algiers	.....	.....	30.08	764.1	67.6	19.8	57	NW	.....	.....	3	.....	1	.....	.....	0	0	Very fair.....	Tourillere.
La Calle	.....	.....	30.11	764.9	70.2	21.2	72	NW	.....	.....	3	.....	5	.....	.....	0.079	2.0	Cloudy.....	Foufrede.
Tunis	.....	.....	30.13	765.4	70.9	21.6	55	NW	.....	.....	5	.....	5	.....	.....	0.055	1.4	Cloudy.....	Jacques.
Sfax	.....	.....	30.18	766.5	71.6	22.0	.....	N	.....	.....	6	.....	10	.....	.....	0	0	Covered.....	Gau.
Saida	.....	.....	30.08	764.1	62.6	17.0	62	S	.....	.....	5	.....	2	.....	.....	0	0	Fair.....	Herbin.
Tebessa	.....	.....	30.03	762.8	59.0	15.0	70	NW	.....	.....	1	.....	4	.....	.....	Blank	Blank	Cloudy.	Watrin.
Geriville	.....	.....	30.04	763.1	62.6	17.0	63	S	.....	.....	3	.....	5	.....	.....	0.157	4.0	Cloudy.....	Brugniaux.
Laghouat	.....	.....	30.11	764.8	63.7	17.6	59	W	.....	.....	3	.....	2	.....	.....	0	0	Fair.....	Bertrand.
Biskra	.....	.....	30.18	766.5	69.8	21.0	45	NW	.....	.....	1	.....	7	.....	.....	0.039	1.0	Very cloudy	Chanvaux.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1.088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.17	740.9	29.72	754.9	52.5	11.4	50	SW	.....	.....	5	.....	5	.....	.....	1.843	46.8	.....	Prof. Ivan Stožir.
Cracow, I. R. Observatory	28.85	732.7	29.61	752.2	46.6	8.1	96	ENE	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	Dr. Wierzbiski
Eperies	28.76	730.5	29.63	752.7	50.4	10.2	96	Calm	.....	.....	0	.....	10	.....	.....	0.472	12.00	.....	Julius Mikolna.
Gratz	28.38	720.9	29.65	753.0	42.3	5.7	85	NW	.....	.....	4	.....	7	.....	.....	0.183	4.65	.....	Andreas Rospini.
Hermannstadt	28.24	717.4	29.67	753.6	67.8	19.9	59	SW	.....	.....	2	.....	10	.....	.....	0.028	0.70	.....	Prof. A. Gottschling.
Kremsmünster	28.31	719.0	29.67	753.5	41.2	5.1	83	W	.....	.....	1	.....	9	.....	.....	0.346	8.8	.....	Prof. C. Wagner.
Lemberg	28.68	728.5	29.67	753.5	50.4	10.2	94	NE	.....	.....	1	.....	10	.....	.....	0.591	15.0	.....	Dr. T. Stanecki.
Pola	29.58	751.3	29.69	754.1	59.4	15.2	58	W	.....	.....	4	.....	6ks	.....	.....	0.339	8.6	.....	I.R.Hydrographic Office
Szathmar	29.25	742.9	29 71	754.6	54.1	12.3	95	S	.....	.....	3	.....	8	.....	.....	0.256	6.5	.....	Julius Csics, S. J.
Szegedin	29.41	746.9	29.68	753.9	57.2	14.0	76	SE	.....	.....	3	.....	6	.....	.....	0.207	5.25	.....	Karl Stancel.
Trieste	29.62	752.3	29.72	754.9	56.7	13.7	69	SW	.....	.....	1	.....	2	.....	.....	1.937	49.2	Rainy.....	P. Busin.
Vienna	28.92	734.6	29.65	753.2	39.6	4.2	92	W	.....	.....	2	.....	10	.....	.....	0	0	.....	I. R. Central Met. Obs'y.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon	28.22	716.8	29.76	755.9	37.8	3.2	82	NW	.....	.....	2	.....	9	.....	.....	0.307	7.8	.....	Prof. M. Passau.
Brussels	29.52	749.8	29.69	754.0	42.6	5.9	48	WSW	.....	.....	4	5	0	NW	WSW	0.106	2.70	Solar Halo..	Royal Observatory
Furnes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.571	14.5	.....	M. E. de Cas
Maeseyck	29.59	751.5	29.72	754.8	42.4	5.8	71	W	.....	.....	2	.....	10	.....	.....	0.043	1.1	.....	M. Pierrot.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

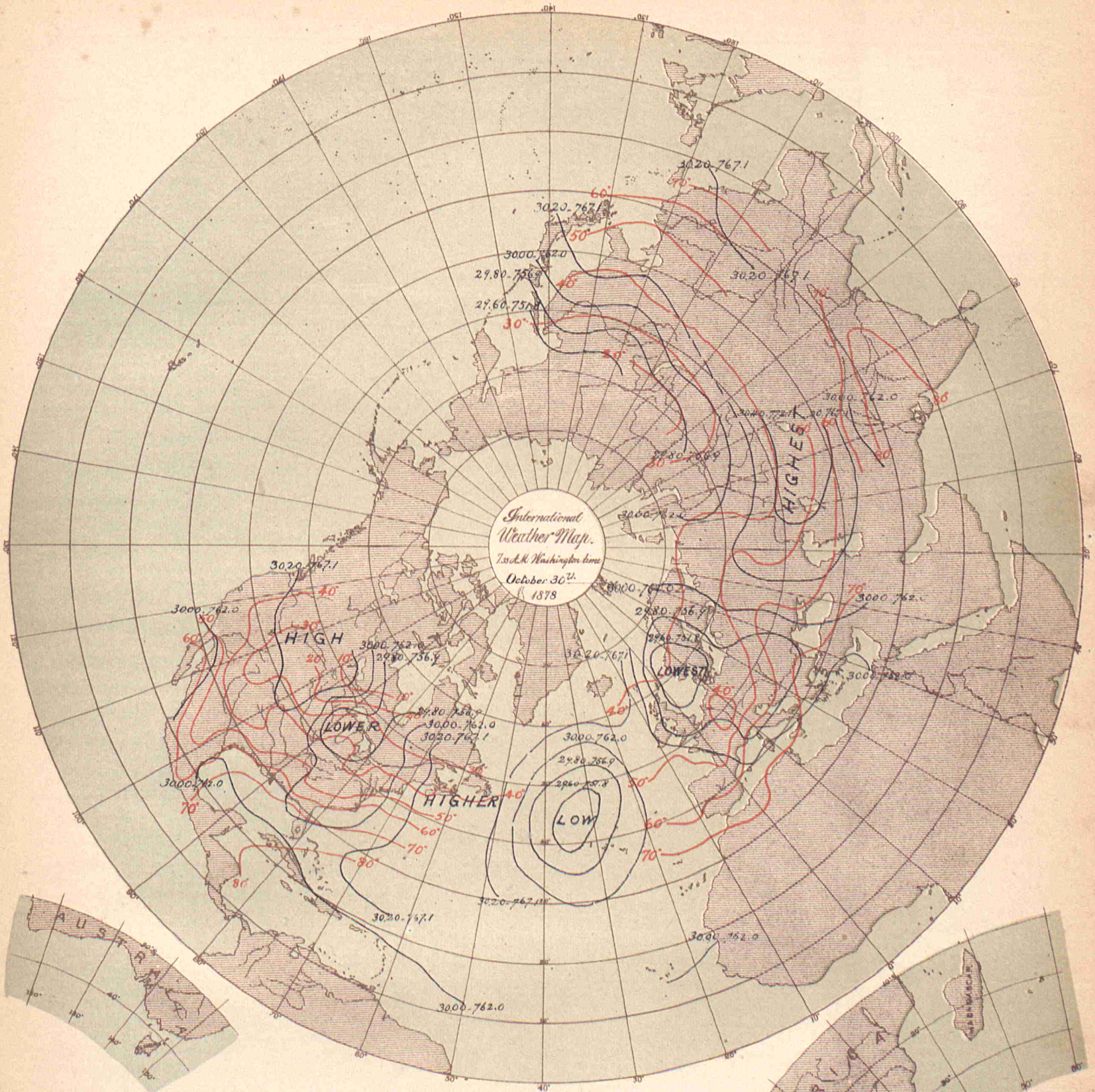
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature.		Barometer. Reduced to sea-level		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force	Clouds. Amount. Up'er	Clouds. Amount. Low'r	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Weather.	Observer.
	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.		
Aberdeen	29.57	751.1	29.67	753.6	42.0	5.6		NNE	8	3.6			9			0.510	12.95	Raining	W. Boswell.
Ardrossan	29.75	755.6	29.76	755.9	47	8.3		NNW			4		8					Overcast	George Carrick.
Armagh, Observatory			29.92	760.0	43.5	6.4		NNW	17	7.6			7					D. clouds	S. Call.
Bidston, (Liverpool Obs.)			29.67	753.6	46.6	8.1		NW	22	9.8			10					Overcast	John Hartnup.
Bolton																			Thomas Mackereth.
Bradford, Yorkshire	29.22	742.2	29.61	752.1	46.1	7.8		NW			2		5			0.02	0.5	D. clouds	J. McLandsborough.
Bridgetown, (Barbados)	29.90	759.4	29.93	760.2	80	26.7		NE			2		8					Overcast	Pvt. G. W. Roberts, A. H. C.
Cambridge, Observatory			29.64	752.8	38.0	3.3		W			1		7					Snowing	H. Todd.
Cardington			29.68	753.9	41.0	5.0		NW			1		7			Blank	Blank	Blue sky	John McLaren.
Chatham, School M. E.	29.56	750.8	29.69	754.1	40.7	4.8		W			2		9					Overcast	Lt. G. W. Morris, R. E.
Dartmoor	28.41	721.6	29.92	760.0	38.0	3.3		N			5		8					Showery	Alexander Watt.
Donaghadee	29.79	756.7	29.82	757.4	46	7.8		NNW			6		5					D. clouds	J. Mac Gowan.
Dover	29.65	753.1	29.67	753.6	40	4.4		WNW			3		7					¾ clouded	J. Costello.
Falmouth, Observatory	29.74	755.4	29.98	761.5	46.9	8.3		NW			5		7					Squally	The Staff.
Fort Napier, (Natal)	27.60	701.0	30.02	762.5	75.5	24.2		E			2		5					D. clouds	Pvt. G. Salmon, A.H. C.
Free Town, (Sierra Leone)	29.66	753.4	29.89	759.2	87	30.6		Calm?			1?		3					D. clouds	
Galway, Queen's College			30.03	762.7	48	8.9		NW			4		6					D. clouds	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	30.03	762.7	30.08	764.0				NE			4		3					Blue sky	Corpl. Wm. Allen, A. H. C.
Glasgow, Observatory	29.55	750.6	29.76	755.9	45.5	7.5		NW			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.63	752.6	29.64	752.8	37	2.8		WNW			3		6					Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.51	749.5	29.68	753.9	40.7	4.8		WNW			1		9					Nearly overcast.	The Staff, for G. B. Airy.
Guernsey	29.69	754.1	29.91	759.7	48	8.9		NW			5		3					Showery	Dr. S. E. Hoskins, F.R.S.
Helston			30.03	762.7	48	8.9		NW			4		ck			0.26	6.6	Fair	M. P. Moyle.
Holyhead	29.69	754.1	29.74	755.4	50	10.0		NNW			8		8					Squally	John Tilston.
Jersey	29.65	753.1	29.95	760.7	48.0	8.9		WNW			6		5			Blank	Blank	D. clouds	J. Fisher.
Kew, Observatory	29.66	753.4	29.70	754.4	43.0	6.1		W	17	7.6			10					Threatening	The Staff.
Kingstown	29.86	758.4	29.89	759.2	47	8.3		NW			6		7					D. clouds	George Mitchell.
Leicester, Museum			29.65	753.1	44.3	6.8		NW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.99	759.4	29.97	761.2	71	21.7		NW			3		8ks			Blank	Blank	Overcast	Sergt. Beckett.
Nairn	29.72	754.9	29.81	757.2	43	6.1		NNW			6		10					Raining	W. D. Penny.
Nassau, (Bahamas)			30.03	762.7	80.2	26.8		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.47	748.5	29.66	753.4	43.1	6.2		NW			1		8k;d		N	0.292	7.42	D. clouds	E. J. Lowe, F. R. S.
Oscott, St. Mary's College	29.13	739.9	29.66	753.4	43.9	6.6		NW			3–4		6					D. clouds	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y			29.69	754.1	45	7.2		W			2		2					Blue sky	H.E. Bellamy.
Plymouth	29.81	757.2	29.89	759.2	46.8	8.2		NW			5		8					Showery	John Merrifield.
Roche's Point	30.02	762.5	30.06	763.5	48	8.9		N			6		2					Fine	W. Kennedy.
Saint Ann's Head	29.72	754.9	29.88	758.9	48	8.9		NW			6		7					D. clouds	John C. Walker.
Sandwick Manse, (Orkneys.)			29.78	756.4	42.7	5.9		N	46	20.6			10					Showery	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey)			30.01	762.2	70.0	21.1		Calm			0		1					Blue sky	Sergt. W. H. Lyne.
Sheffield	29.37	746.0	29.65	753.1	45.8	7.7		W			1		9			0.03	0.8	Overcast	W. F. Cooper.
Silloth, Rectory	29.63	752.6	29.66	753.4	43.8	6.6	73	NW			6		7			0	0	D. clouds	C. Edith Redford.
Stonyhurst Observatory	29.24	742.7	29.65	753.1	45.0	7.2		WNW			2		10					Threatening	Rev. S. J. Perry.
Stratfield Turgiss	29.50	749.3	29.72	754.9	43.6	6.4		W			2		9					Overcast	Rev. C. H. Griffith, F.M.S.
Thurso	29.74	755.4	29.80	756.9	45	7.2		NNE			7		10					Gloomy	John Trotter.
Truro, Royal Institution			29.98	761.5	51	10.6		NW			8		7					Gloomy	W. Newcombe.
Valencia, Observatory	30.14	765.5	30.16	766.1	47.3	8.5		NNW	17	7.6			10			Blank	Blank	D. clouds	The Staff.
SUB-SERIES.																			
Hobart Town, (Tasmania)			29.52	749.8	55.0	12.8	73	NW			3		5k			0	0		Francis Abbott, F.R.A.S.
Leith, Restalrig Park																			Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	762.0	77.1	25.1	57	ENE	21.5	9.6		0	2		ENE	0.08	2.0	Squally	C. Meldrum.
Melbourne, Observatory	29.81	757.2	29.90	759.4	55.0	12.8	80	SW	12	5.4			10			0.09	2.3	Threatening	R. L. J. Ellery.
Monach L't-house, (Hebrides)																			J. Youngclause.
North Unst, (Shetland Is.)																			Robert Burnet.

NOTE—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0 to 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

MARINE SERIES. VESSELS.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
Brig Catherine, N. 46° 50′, W. 41° 10′			29.68	753.9	54	12.2		NW			7		7			6		Squally	Capt. Alex. Wilson.
Barque Commewyne, N. 32° 40′, W. 38° 35′			30.08	764.0	75	23.9		NNW			4		3			2	NNW	D. clouds	Capt. A. Buchan.
S. S. Gordon Castle, N. 47° 35′, W. 33° 25′			29.57	751.1	59	15.0		E			1		10			3	ENE; SE	Foggy	Capt. W. Waring.
Barque Margaret Smith,																			Capt. D. W. A. Quaile
Schooner Traveller																			Capt. Alex Simpson.
Barque Virginia																			Capt. W. Spratly.

NOTE.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Contral Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Punta Arenas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mr. Ansart.
San José	26.21	665.7	29.93	760.2	66.2	19.0	95	SE	.....	.....	1	9cs	.....	.....	.....	Inap.	Inap.	.....	Federico Maison.

NOTE.—In the originals, the barometer is given as read off, its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.62	752.4	29.67	753.6	45.3	7.4	74	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	.....
Faröe	29.58	751.2	29.60	751.7	44.1	6.7	86	SW	.....	.....	4	.....	5	.....	.....	.....	.....	.....
Godthaab, (Greenland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stykisholm, (Iceland)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thorshavn, (Faröe)	30.16	766.1	30.20	767.0	36.9	2.7	74	N	.....	.....	5	.....	7	.....	.....	.....	.....	Raining
Vestervig	29.30	744.3	29.47	748.6	46.0	7.8	83	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.40	746.8	29.94	760.8	48.2	6.2	61	NW	.....	.....	1	.....	5	.....	NW	0.134	3.4	Covered	Collignon, Directeur.
Amiens, Normal School	29.72	755.0	29.84	757.8	46.4	8.0	81	SW	.....	.....	3	.....	0	.....	.....	0.339	8.6	Clear	Bonvallet, Director.
Avignon, Normal School	29.85	758.2	29.93	760.2	55.4	13.0	40	NW	.....	.....	2	.....	5	.....	WNW	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.31	744.4	29.88	758.9	41.0	5.0	61	NNW	.....	.....	3	.....	8kn	.....	.....	0.394	10.0	Very cloudy	C. Saillard.
Beauvais, Normal School	29.67	761.1	29.86	758.6	43.3	6.5	79	W	.....	.....	1	.....	8	.....	WNW	0.610	15.50	Very cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	28.92	734.5	29.83	757.7	41.2	5.1	74	S	.....	.....	6	.....	10	.....	SW	0.843	21.4	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	29.08	738.7	30.00	761.9	40.5	4.7	83	NW	.....	.....	4	.....	10n	.....	N	0.217	5.5	Sleeting	M. Marlot, Director.
Bourges, Normal School	29.18	741.2	29.98	761.5	42.1	5.6	64	NW	.....	.....	3	.....	5k	.....	NW	0.402	10.20	Rain & snow	A. Waquet, Director.
Brest, Naval Observatory	29.79	756.6	30.03	762.7	51.8	11.0	56	NW	.....	.....	3	.....	8	.....	NW	0.187	4.75	Hail-squalls	M.de Rermaur, Director.
Carcassonne, Normal School	29.68	752.7	30.00	762.4	50 0	10	82	W	.....	.....	2	.....	5	W	W	0.12	3.	Cloudy	Septembre, Director.
Caen	29.78	756.4	29.86	758.4	48.6	9.2	81	W	.....	.....	2	.....	1	.....	W	0	0	Slightly cl'dy	M. Lair, Director.
Chartres, Normal School	29.80	744.3	29.88	758.9	45.1	7.3	83	NW	.....	.....	6	.....	9	.....	SE	0.20	5.	.....	M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.50	749.3	29.82	757.5	40.3	4.6	87	WSW	.....	.....	1	.....	5k	.....	WSW	0.358	9.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs	28.58	726.0	29.98	761.4	40.6	4.8	71	W	.....	.....	3	.....	5	.....	WNW	0	0	Cloudy	Alluard, Director.
Commercy, Normal School	28.96	735.6	29.87	758.7	34.0	1.1	95	NW	.....	.....	3	.....	10n	.....	NW	0.55	14.	Snowing	Dr. Coulet, Director.
Commune de Gréasque*	28.82	731.9	29.96	760.9	49.5	9.7	76	NW	.....	.....	3	.....	10	W	.....	0	0	Covered	M. King.
Grenoble, Normal School	29.10	739.0	29.88	759.0	42.8	6	67	NW	.....	.....	2	c	n	.....	W	0.364	9.25	Cloudy	M. Ablard, Director.
La Roche-sur-Yon, N. School	29.87	758.8	30.10	764.4	48.2	9.0	66	N	.....	.....	2	.....	5	.....	N	0.012	0.3	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.07	753.7	29.98	761.6	45.5	7.5	57	NW	.....	.....	3	.....	5	.....	NW	0.285	7.25	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.00	736.7	29.95	760.6	41.0	5	71	NW	.....	.....	3	.....	8	.....	W	0.480	12.20	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	29.98	761.5	30.08	764.0	46.0	7.8	69	NW	.....	.....	4	.....	.....	.....	NW	0.020	0.5	.....	Lt T. Carré, Director.
Mâcon, Normal School	29.78	756.5	29.82	757.3	47.3	8.5	84	SW	.....	.....	1	.....	10	.....	.....	0.291	7.4	Covered	M. Galain, Director.
Mirecourt, Normal School	28.71	729.2	29.76	756.0	36.9	2.7	89	SSW	.....	.....	3	.....	5n	.....	E	0 35	9.	Raining	M. Barbier, Director.
Nismes Normal School	29.74	755.5	29.95	760.7	55.0	12.8	43	NW	.....	.....	3	.....	5	.....	NW	0	0	Cloudy	Boyer, Director.
Privas, Normal School	28.85	732.9	29.93	760.1	51.8	11	63	N	.....	.....	3	.....	1	N	N	0	0	Clear	M. Cantier.
Puy de Dome (Summit)	24.90	634.8	.....	.....	25.2	— 3.8	100	W	.....	.....	4	.....	Fog	.....	.....	0.646	16.4	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.06	763.4	30.09	764.2	51.3	10.7	78	NNW	.....	.....	1	.....	0	.....	.....	0.04	1.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.75	755.7	29.84	757.9	46.4	8.0	64	SSW	.....	.....	2	.....	10	.....	.....	0.776	19.7	Covered	Frere Lucard, Director.
Saint Malo (Port)	.....	.....	29.97	761.2	49.3	9.6	41	WNW	.....	.....	4	.....	5	.....	WNW	0.637	16.18	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.71	754.7	29.88	758.9	43.5	6.4	66	W	.....	.....	2	.....	10	.....	W	0.213	5 4	.....	E. Renou.
Tarbes, Normal School	28.95	735.2	30.02	762.6	51.8	11	86	SW	.....	.....	4	.....	10	.....	.....	0.83	21.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.24	742.6	29.97	761.2	43.9	6.6	88	W	.....	.....	1	.....	5	.....	N	0.47	12.	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.84	757.8	29.86	758.5	79.2	26.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.02	26.	.....	L'Abbé Marchés.
Lyons, Observatory	.....	.....	29.97	761.1	41.4	5.2	84	.....	.....	.....	.....	.....	5	.....	.....	0.177	4.5	.....	.....
Marseilles, Observatory	.....	.....	29.92	760.0	56.3	13.5	52	WNW	.....	.....	2	.....	9	.....	.....	0.022	0.55	.....	The Staff.
Mont-Louis	24.77	629.1	30.08	764.1	49.0	9.8	88	S	.....	.....	3	.....	2	.....	NW	0	0	.....	M. Cave.
Nice	.....	.....	29.80	757.0	59.4	15.2	57	W	.....	.....	8	.....	2	.....	.....	0	0	.....	Dr. A. Niepce.
Paris, Montsouris Obs'y	29.58	751.4	29.86	758.4	43.2	6.2	62	WNW	.....	.....	4	.....	10	.....	.....	0.252	6.4	Sprinkling	Marié Davy, Director
Perpignan	.....	.....	30.02	762.4	53.8	12.1	64	NE	28.0	12.50	.....	.....	8	.....	W	0	0	.....	Dr. Fines.
Pic du Midi, (Summit) H. P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Baylac.
Pic du Midi, (Plantade) H. P.	22.44	570.1	.....	.....	27.9	— 2.3	.....	NW	.....	.....	6	.....	10	.....	.....	0.799	20.3	Snowy	Gen'l de Nansouty
Toulouse, Observatory	29.30	716.6	30.12	765.0	46.4	8.0	78	NW	.....	.....	3	.....	10	.....	.....	0.136	3.45	Raining	B. Baillaud.
Tours	29.78	756.5	29.98	761.5	46.9	8.3	59	W	.....	.....	3	.....	4	.....	W	0.236	6.0	.....	C. Marquet.
Versailles	.....	.....	29.87	758.8	42.4	5.8	56	NW	.....	.....	2	.....	8	.....	.....	0.393	9.98	Cloudy	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.32	770.1	30.35	770.8	49.5	9.7	94	ENE	1.3	0.6	.....	.....	4k	.....	NE	0	0	Cloudy	Marc Dechevrens, S. J.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Gréasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Gréasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added. For Macon: the barometer readings in the first two columns are apparently corrected for temperature and elevation, but *not* for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–1.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Low'r 0–10.	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.77	730.8	29.60	751.9	43.9	6.6	74	SE			4		10			0.08	2.	Raining	Prof. Dr. Hoh.
Berlin	29.52	749.7	29.69	754.1	46.2	7.9	71	SE			1		8			0	0		Prof. Arndt.
Breslau	29.13	740.0	29.66	753.3	43.0	6.1	89	N			3		10			0.027	0.68	Raining	Royal University Obs'y
Carlsruhe	29.29	744.0	29.73	755.1	36.3	2.4	92	SW			3		10			0.374	9.5	Rain & snow	Albert Senz.
Cassel	29.08	738.7	29.69	754.0	38.5	3.6	87	N			2		8	SW		0.125	3.18		Dr. H. Möhl.
Crefeld	29.51	749.6	29.67	753.7	43.5	6.4	76	SW			3					0.08	2.		Director Lose.
Emden	29.68	752.7	29.67	753.6	42.3	5.7	75	S			2		2	W		0.087	2.2		Prof. Prestel.
Frankfort on the Main	29.32	744.6	29.69	754.0	42.1	5.6		NNW			2		10			0.150	3.8		Physical Society.
Friedrichshafen	28.30	718.9	29.77	756.1	39.2	4.0	88	W			3		10	WNW		0.083	2.1	Raining	M. Wilhelm.
Hamburg	29.61	752.0	29.68	753.8	41.9	5.5	83	SE			1		9ks			0.028	0.7		Captain F. Hegemann.
Kiel	29.66	753.4	29.68	753.9	42.4	5.8	77	SW			2		10			0.008	0.20		Prof. G. Karsten.
Königsberg, (Prussia)	29.71	754.5	29.79	756.6	42.6	5.9	87	SE			2		6			Inap.	Inap.		Prof. E Luther.
Köslin			29.71	754.5	43.5	6.4		Calm			0		4			0	0		H. Müller.
Leipsic, Observatory	29.26	743.1	29.68	753.8	46.0	7.8	69	S			1		9			0.024	0.6		Prof. Bruhns, Sec. Counsel.
Memel, Naval School	29.79	756.6	29.84	757.8	43.5	6.4	94	SE			1		9cs					Foggy	Reinbrecht and Skalweit.
Neufahrwasser	29.77	756.1	29.78	756 5	46.4	8.0	82	E			2		3			0	0		A. Lothes.
Posen	29.47	748.5	29.76	756.0	42.4	5.8	79	NW			2		10			0	0		Dr. Magener.
Strassburg (in Alsace)	29.22	742.1	29.78	756.4	37.6	3.1	93	W			2		10	W		0.261	6.37	Raining	Imp. Astronomical Observatory
Stuttgart	28.71	729.2	29.67	753.6	38.3	3.5	83	W			2		10			0.134	3.4	Light rain	Prof. Schoder.
Treves, (Trier)	29.19	741.3	29.70	754.4	43.9	6.6	63	W			6		10			0.133	3.38	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.14	714.7	29.61	752.2	42.8	6.0	69	WSW	7.4	3.3			9ck		SW	0.008	0.2		Dr. Von Bebber.
Wustrow, Naval School	29.67	753.6	29.69	754.2	45.0	7.2	77	SSE			3		8ks			0	0		E. Schütz, Dir.
German Naval Series.																			

Note—The elevation of Friedrichshafen is 413.3 meters, or 1,355.9 feet; Weissenburg, 481 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.60	751.8	29.98	761.4	77.4	25.2		SW			1.0		Sm'e					Clear	Dr. J. F. J. Schmidt.

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee																			
Deesa	29.40	746.8	29.88	758.9	84.6	29.2	20	N					0			0	0	Blue sky	
Bombay	29.71	754.6	29.75	755.6	83.7	28.7	68	NW	14	6.3			3	WNW		0	0	D. clouds	
Poona	27.81	706.3	29.80	757.0	78.9	26.1	58	NE					5		NE	0	0	D. clouds	
Lahore	29.12	739.5	29.87	758.6	75.7	24.3	38	Calm	0.7	0.3						0	0	Blue sky	
Belgaum	27.23	691.7	29.76	756.0	76.3	24.6	76	W	8	3.6			10		NNE	0	0	Threatening	
Roorkee	28.93	734.7	29.83	757.6	76.8	24.9	49	Calm	1	0.4						0	0		
Agra	29.27	743.5	29.84	757.8	80.7	27.1	27	W								0	0		
Nagpur	28.81	731.7	29.85	758.2	80.1	26.7	59	NE	4.8	2.2			10		NW	0	0	Overcast	
Lucknow	29.45	748.1	29.82	757.5	82.3	27.9	50	Calm	0.8	0.4						0	0	Blue sky	
Allahabad	29.50	749.3	29.81	757.2	77.4	25.2	70	Calm	0.9	0.4			3			0	0	D. clouds	
Patna	29.65	753.1	29.83	757.7	80.5	26.9	76	Calm	0.1	0.04			4			0	0	D. clouds	
Hazaribagh	27.81	706.3	29.83	757.8	74.3	23.5	74	ENE	5.3	2.4			10			0	0	Gloomy	
Cuttack	29.72	754.8	29.80	756.9	77.0	25.0	86	NE	8.7	3.9			8			0.59	15.0	Drizzling	
Calcutta (Alipore)	29.81	757.3	29.84	757.8	75.3	24.1	90	NE	5.0	2.2			10			0.07	1.8	Showery	
Goalpara	29.45	748.1	29.85	758.1	72.8	22.7	91	Calm	6.8	3.0			7	SW		0.10	2.5	D. clouds	
Chittagong	29.76	756.0	29.86	758.3	78.9	26.1	82	Calm	3.3	1.5			8					Thunder-storm	
Sibsagar	29.55	750.6	29.89	759.3	69.5	20.8	84	SSE	1.6	0.7			10	W	W	0	0	D. clouds	
Jubbulpore	28.45	722.6	29.81	757.1	81.7	27.6	54	E	2.2	1.0			6			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.31	744.4	29.71	754.7	53.4	11.9	67	S	3.8	1.7	.....	.....	5	.....	.....	0.614	15.6	.....	Prof. Giovanni Clodig.
Padua	29.57	751.1	29.68	753.9	55.9	13.3	61	S	4.9	2.2	.....	.....	4	W	.....	0.106	2.7	.....	Prof. Dott. Lorenzoni
Vicenza	29.48	748.7	29.67	753.5	55.9	13.3	58	SW	7.4	3.3	.....	.....	5	W	.....	0.386	9.8	.....	Cont. Alm. Da Schio.
Bergamo	28.39	721.2	29.72	754.8	51.4	10.8	54	W	.....	.....	4	.....	5	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.13	740.0	29 65	753.1	52.3	11.3	68	NNW	.....	.....	2	.....	3	W	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.78	730.9	29.68	753.9	50.5	10.3	49	SW	5.6	2.5	.....	.....	8	E	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.79	705.9	29.69	754.2	49.1	9.5	58	N	.....	.....	4	.....	5	W	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.48	748.7	29.70	754.3	59.9	15.5	40	WSW	.....	.....	8	.....	3	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.50	749.4	29.67	753.6	63.0	17.2	37	W	15.4	6.9	.....	.....	0	.....	.....	0.035	0.9	.....	Prof. G. M. Garibaldi.
Parma	29.41	746.9	29.72	754.9	55.9	13.3	64	WSW	.....	.....	8	.....	4	.....	.....	0.165	4.2	.....	Prof. P. Pigorini.
Florence	29.52	749.7	29.77	756.1	59.9	15.5	62	SW	.....	.....	8	.....	10	SW	.....	0.106	2.7	.....	Cav. F. Meucci
Leghorn	29.69	754.0	29.77	756.1	61.9	16.6	57	WSW	32.9	14.7	.....	.....	5	WSW	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.69	754.1	29.74	755.3	59.7	15.4	61	S	15.4	6.9	.....	.....	8	SW	.....	0	0	.....	Prof. Luigi Guidi.
Urbino	28.20	716.3	29.74	755.3	52.9	11.6	64	SW	.....	.....	6	.....	6	.....	.....	0.091	2.8	.....	Prof. P. Serpieri
Rome	29.77	756.2	29.95	760.6	65.1	18.4	57	W	13.7	6.1	.....	.....	3	.....	.....	0.079	2.0	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.78	756.4	29.98	761.4	66.0	18.9	40	W	.....	.....	6	.....	6	SW	.....	0.276	7.0	.....	Prof. L. Palmieri.
Lecce	29.70	754.4	29.95	760.7	68.5	20.3	53	WNW	9.4	4.2	.....	.....	6	NW	.....	0.110	2.8	.....	Prof. C. De Giorgi.
Cagliari	29.84	757.9	30.03	762.7	67.5	19.7	61	SE	.....	.....	2	.....	5	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.15	740.4	30.01	762.3	72.3	22.4	76	NW	0.7	0.3	.....	.....	9	.....	.....	0.417	10.6	.....	Prof. F. D. Conti.
Palermo	29.82	757.3	30.07	763.6	67.6	19.8	48	WNW	9.5	4.4	.....	.....	7	.....	.....	0.043	1.1	.....	Prof. G. Cacciatore.
Syracuse	29.95	760.7	30.02	762.6	68.0	20.0	61	NE	17.4	7.8	.....	.....	10	SW	.....	0	0	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	30.04	763.0	30.24	768.1	50.1	10.1	76	NW	0.6	0.3	.....	.....	0	.....	.....	0	0	Very clear...	'
Tokei (Yeddo) Observatory	30.08	764.0	30.15	765.8	52.5	11.4	69	NNW	6.8	3.0	.....	0	0	.....	.....	0	0	Clear	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. T. C. Mendenhall.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	68.4	17.4	62	N	.....	.....	3	0	0	.....	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.08	637.2	30.19	766.9	50.0	10.0	63	S	.....	.....	.....	.....	1	.....	.....	0	0	Clear	Prof. L. Perez
Leon	24.44	620.9	30.01	762.2	59.7	15.4	80	SSW	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.14	587.6	30.12	765.0	55.8	13.2	81	Calm	0	0	.....	0	10k	.....	.....	0	0	Covered	Central Observatory.
Pabellon, (Aguascalts)	.....	.....	.....	.....	61.8	11.0	73	W	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	29.03	760.3	29.95	760.6	72.1	22.3	92	S	.....	.....	1	0	0	.....	.....	0	0	Foggy	M. M. Cházaro.
San Luis Potosi	24.26	616.5	30.27	768.9	61.0	10.6	42	SSE	.....	.....	0	0	10	.....	SSE	0	0	Covered	G. Barroeta. M. D.
Vera-Cruz	29.96	761.1	29.99	761.8	76.1	24.5	83	NW	.....	.....	.....	2c	4ks	SE	N	0	0	½ cloudy	Prof. J. Rossell.
Zacatecas	22.59	573.7	30.19	766.9	55.5	13	81	SSW	.....	.....	1	0	0	.....	.....	0	0	Misty	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.32	592.3	30.08	764.1	52.7	11.5	57	N	.....	.....	.....	0	6	.....	Calm	0.106	2.70	.....	Prof. P. Spina.
Durango	24.21	615.0	30.08	763.9	57.0	13.9	76	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.34	719.7	29.97	761.2	76.8	24.9	71	E	.....	.....	1	0	0	.....	.....	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.82	757.4	29.97	761.2	69.4	20.8	.....	Calm	.....	.....	0	3cs	2s	.....	.....	0	0	Foggy	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.69	754.2	29.69	754.2	40.6	4.8	.....	SSW	.....	.....	4	.....	.....	.....	.....	0.098	2.5	.....	
Groningen	29.60	751 7	29.65	753.1	42.8	6.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0.047	1.2	.....	
Helder	29.63	752.6	29.63	752.6	42.8	6.0	.....	N	.....	.....	2	.....	.....	.....	.....	0.028	0.7	.....	
Hellevoetsluis	29.66	753.3	29.66	753 3	43.3	6.3	80	SW	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.63	752.7	29.68	753.9	46.4	8.0	68	WSW	.....	.....	2	.....	5	.....	.....	0.126	3.2	Cloudy	H. v d Broek.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as exhibited, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instru'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er. 0–10.	Low'r. 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather	Observer
Bergen	29.48	748.8	29.54	750.2	46.8	8.2	73	WNW	2.7	1.2			1			0	0		
Brõno	29.67	753.7	29.71	754.7	39.2	4.0	67	SE	9	4			8			0	0		
Christiania	29.39	746.5	29.54	750.3	39.6	4.2	92	NNE	7	3			10			0.114	2.9	Light rain	
Tromsö	29.82	757.3	29.86	758.4	32.0	0.0	81	E	4	2			5			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Stations.	Bar. corr. Inches.	Millimeters.	Bar. reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Velocity	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather	Observer
Angra, (Azores)	29.64	752.8	29.83	757.6	68.0	20.0	92	S	8.1	3.6			2			0.472	12.0		Dr. J. A. Sampaio.
Campo Major	29.17	740.9	30.19	766.9	63.5	17.5	44	NE	3.1	1.4			0			0	0		Dr. A. M. F. dos Santos.
Funchal, (Madeira)	29.95	760.6	30.03	762.8	71.6	22.0	64	ESE	3.8	1.7			6			0	0		Capt. D. A. de Cunha.
Lisbon, Observatory	29.81	757.1	30.17	766.2	59.5	15.3	54	ENE	7.4	3.3			2			0	0		The Staff.
Ponta Delgada, (Azores)	29.80	756.8	29.87	758.6	69.4	20.8	94	SW	13.7	6.1			10			1.020	25.9		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of [illegible] h., 6 m., p. m.

Naval Series. Vessels.	Bar. corr. Inches.	Millimeters.	Bar. reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Velocity	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper. From—	Lower. From—	Sea or swell. Height scale 0–[illegible]	Direction from—	Weather	Observer
Bar'tholomew Dias																			R. A. T. Pinha, Com'd.
D. Fernando																			A. M. de Sande, Com'd.
India																			A. D. Pedroso, Com'd.
Mindello																			J. F. R. R. Bastos, Com'd't.
Quanza,																			
St. Thomas, Gulf of Guinea			29.96	761.0	84.2	29.0		Calm			0		0			1		Blue sky	A. J. de Mattos, Com'd't.
Rio Douro																			J. T. d'Oliveria, Com'd't.
Sá da Bandeira																			F. Texeira da Silva, Com'd't.
Sado, N. 13° 04′, W. 17° 27′			29.92	760.0	83.3	28.5		ENE			2		0			2	ENE	Blue sky	L. Ribeiro de Costa, Com'd't.
Tejo																			M. T. Guimaraes, Com'd't.

NOTE.—The Sá da Bandeirà gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Bar. corr. Inches.	Millimeters.	Bar. reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather	Observer
Warsaw	29.31	744.5	29.74	755.4	44.4	6.9	91	WNW	4	2			9ks						Astronomical Obs.
Wilna	29.41	747.0	29.83	757.7	49.1	9.5	88	Calm	0	0			10					Heavy clouds	Astronomical Obs.
Dorpat	29.66	753.4	29.91	759.7	44.2	6.8	96	ESE	4	2			10n						Prof. Dr. Weihrauch.
St. Petersburg	29.93	760.1	29.94	760.5	43.7	6.5	96	SE	7	3			10n					Foggy	Central Physical Obs.
Kieff	29.20	741.7	29.82	757.5	60.6	15.9	75	SSE	18	8			9ksn						Physical Cabinet.
Nikolaiev	29.92	760.0	29.99	761.8	63.3	17.4	77	SSE	13	6			2k						Kurdakof.
Kertch	30.05	763.2	30.07	763.7	64.0	17.8	88	SSE	7	3			0						Lagorio.
Moscow	29.52	749.7	30.07	763.7	53.6	12.0	85	SSW	11	5			3ks						Meteorological Obs.
Lugan	29.97	761.2	30.17	766.3	54.1	12.3	73	ENE	9	4			0						Meteorological Obs.
Archangel	30.02	762.5	30.04	763.0	41.5	5.3	97	NNE	2	1			10						Capt. Sseliwerstow.
Tiflis	28.76	730.6	30.17	766.4	61.3	16.3	71	SE	4	2			8k						Physical Observatory.
Astrakhan	30.42	772.7	30.34	770.6	53.1	11.7	64	ESE	11	5			9ks						Capt. Wisganow.
Krotkowo*	29.83	757.6	30.31	769.8	46.8	8.2	58	W	4	2			2s					Light clouds	Cand. Fatjanow.
Kasan	30.01	762.2	30.28	769.2	51.1	10.6	55	S	2	1			4						Physical Cabinet.
Ekaterinburg	29.13	739.8	30.10	764.5	46.4	8.0	49	W	31	14			8c;cs						Meteorological Obs.
Nukuss	30.08	764.0	30.32	770.0	52.9	11.6	34	NNE	9	4			0						
Tashkend	28.71	729.1	30.47	773.9	45.7	7.6	60	Calm	0	0			0						Teich, A. M.
Barnaul	29.46	748.3	30.00	762.0	36.9	2.7	82	SW	9	4			10						Meteorological Obs.
Yeniseisk	29.57	751.0	29.87	758.8	19.9	−6.7	80	NNW	18	8			0						Marks.
Peking, (China)	30.04	762.9	30.18	766.5	48.4	9.1	66	SW	4	2			0						Physical Observatory.
Nertchinsk																			Meteorological Obs.
Vladivostock																			
Nikolaievsk, on the Amoor	29.45	748.1	29.54	750.3	28.8	−1.8	84	NW	11	5			0						

NOTE.—The originals give the amount and generally the kind of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,3[illegible] feet; Tashkend, 455 [illegible] m., or 1,492.7? ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2 [illegible] N. 5[illegible] 17′, E. 48° 3[illegible].

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Stations.	Bar. corr. Inches.	Millimeters.	Bar. reduced Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	Wind From—	Velocity	Meters per second.	Force.	Clouds Up'er.	Low'r.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather	Observer
Barcelona, Met. Obs'y	29.90	759.5	30.01	762.2	62.2	16.8	49	SW	4.7	2.11			1k			0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	30.11	764.9	30.17	766.4	57.0	13.9	87	NW	3.8	1.68			10			0.296	7.6	Rainy	Prof. Manuel de Navera.
Burgos, Met. Obs'y	27.22	691.4			48.9	9.4	84	N	3.0	1.33						0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.93	709.5	30.17	766.3	57.2	14.0	60	SW	6.7	3.00		1	0	NW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	30.00	762.0	30.15	765.8	68.7	20.4	51	W	1.4	0.64						0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.26	743.2	30.16	766.0	56.8	13.8	61	NE	12.4	5.56		7	1•	=		0	0	Almost cov.	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.93	760.3	30.00	762.0	75.6	24.2	92	Calm	0	0		8c	2k	WSW	ESE	0	0	Cloudy	Benito Vines, S. J
Manilla, Philippine Islands,																			Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.7	30.12	765.1	69.3	20.7	58	ESE	19.5	8.7		0	4		SE	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.57	758.8	29.97	761.1	78.8	26.0	92	SW	0	0		8s	6k	E	E	0.246	6.25	Cloudy	Leonardo de Teleda, Ch'f Eng'r.

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elevation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda																			
Umea	29.74	755.4	29.79	756.7	42.1	5.6	100	SSE			2		10			0.287	7.3		
Hernosand	29.69	754.0	29.74	755.3	43.2	6.2	91	Calm			0		5			0.063	1.6	Raining	
Stockholm	29.54	750.3	29.72	754.8	46.8	8.2	74	SW			4		5			0.106	2.7		
Wisby	29.61	752.2	29.67	753.7	47.8	8.8	87	WSW			4		7			0.165	4.2		
Sub-Series.																			
Upsala	29.61	752.2	29.69	754.1	47.3	8.5	78	S					6		SSW	0.009	0.24		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.44	722.3	29.01	759.7	38.7	3.7	83	S			5		7			0.197	5.0	Cloudy	The Observatory.
Zurich	28.13	714.5	29.82	757.3	39.9	4.4	82	W			5		10			0.039	1.0	Rainy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3 8 mm.; Thermometer, —6.4 cent.; Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.98	761.6	71.1	21.7	58	S	4	2.0			0			0	0		The Observatory.
Valona			30.07	763.8	61.9	16.6		E			1		10			1.97	50.	Stormy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.87	758.7	29.98	761.6	77.9	25.5	61	NE			1		0			0	0	Blue sky	Prof. C. V. A. Van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	30.25	768.3	30.32	770.1	26.9	— 2.8	100	Calm	0	0		0	0			0	0	Clear	Hon. J. Ferguson.
Brockville, Ontario	29.69	761.6	29.90	759.4	39	3.9		SE	1	0.4			10n		SE	0.05	1.3	Light rain	W. R. Bigg.
*Chatham, N B	30.29	769.4	30.36	770.9	25	— 3.9	96	Calm	0	0		5k	Fog	SW	Calm	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.28	769.1	30.32	770.1	44	6.7	79	SE	6	2.7		5c	0	Calm		0	0	Fair	H. J. Cundill, C. E.
Cornwall, Ontario	29.73	755.1	29.98	760.2	34.8	1.6	96	SE			1		10n			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B	30.16	766.1	30.32	770.1	28.7	— 1.8	97	W			1					0	0	Cloudy	H. A. Johnson.
Esquimault, B. C	30.19	766.8	30.24	768.1	47.3	8.5	100	N								0	0	Cloudy	W. H. Bevis.
*Father Point, Quebec	30.17	766.3	30.19	766 8	36	2.2	67	S	20	8.9		0	0			0	0	Clear	J. McWilliams.
Fredericton, N. B	30.26	768.6	30.33	770 4	20.0	— 3.3	89	N	0	0		5k	2s	SW	SW	0	0	Fair	Prof. Harrison.
*Fort Garry Manitoba	29.36	745.7	30.26	768.6	12	—11.1	94	Calm	0	0		1c	0			0	0	Clear	James Stewart.
Granton, Ontario	28.68	728.6	29.80	756.9	38	3.3		SE			1	5k	5ks	Calm	Calm	0.32	8.1	Clear	James Grant.
*Halifax, N. S	30.14	765.5	30.28	769.1	40	4.4	93	E	3	1.3			10n			0.152	3.86	Cloudy	F. Allison, M. A.
Hamilton Ontario	29.47	748.5	29.84	757.9	46.6	8.1	86	NE			2	6ck	8n			0	0	Cloudy	Geo. Dickson, M. A.
Heart's Content, N. F	30.37	771.4	30.39	771.9	38	3.3	81	NW			1	0	0	NE	SE	0	0	Cloudy	E. Weedon.
*Kingston, Ontario	29.51	749.5	29.85	758.2	42	5.6	89	SE	13	5.8			2ks			0.05	1.3	Fair	S. Woods, M. A.
Little Glace Bay, N. S	30.37	771.4	30.41	772.4	46.6	8.1	68	SW	4	1.8		3k	10n			0	0	Fine	C. H. Rigby.
*Montreal, Quebec	29.77	756.1	29.98	761.5	38	3.3	78	E	15	6.7			0	SW	S	0.15	3.8	Light rain	C. H. McLeod, C. E
*Parry Sound, Ontario	29.11	739.4	29.82	757.4	39	3.9	91	Calm	0	0			10s			0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.07	738.4	29.84	757.9	38.7	3.7	91	E			1		10n			0	0	Cloudy	J. F. Jeffers, B. A.
Port Dover, Ontario	29.13	739 9	29.83	757.7	40	4.4	93	Calm	0	0			10n			0	0	Raining	H. Morgan.
Port Hastings, N. S	30.31	769.9	30.36	771.1	46.6	8.1		Calm	0	0						0.06	1.5	Threatening	Peter Grant.
Port Stanley, Ontario	29.16	740.7	29.81	757.2	44	6.7	77	S	5	2.2						0.06	1.5	Fine	Capt. Ashe, R. N
*Quebec, Quebec	29.80	756.9	30.14	765.5	36	2.2	71	NE					10n		SW	0.04	1.0	Light rain	M. Payne.
*Rockliffe, Ontario	29.43	747.5	29.90	759.4	36	2.2	90	E	3	1.3			10n		NE	0	0	Cloudy	W. H. McIntyre.
St. Andrews, N. B	30.21	767.3	30.26	768.6	38	3.3	76	SE	5	2.2			10s		E	0.02	0.5	Light rain	Dr. Gove.
St. John, N. B	30.13	765.3	30.31	769.9	30	— 1.1	89	N	3	1.3		5k	5ks	S		0	0	Cloudy	G. Murdock, C. E.
*Saugeen, Ontario	29.06	738.1	29.79	756.7	37	2.8	90	SE	6	2.7		9ck	0			0.29	7.4	Cloudy	K. Stewart.
Stayner, Ontario	29.00	736.6	29.80	756.9	38	3.3	91	Calm	0	0			10ks			0	0	Cloudy	R. J. Cole.
Stratford, Ontario	28.49	723.6	29.80	756.9	37.3	2.9	88	SE	5.0	2.2		10ck	0	Calm		0	0	Cloudy	C. J. MacGregor, M.
*Sydney, C. B	30.37	771 4	30.41	772.4	41	5.0	91	E	1	0.4			10s			0	0	Overcast	T. C. Hill.
*Toronto, Ontario	29.44	747.8	29.83	757.7	41	5.0	93	S	2	0.9		8k	2ks	E	E	0	0	Fair	Magnetic Observatory.
Windsor, N. S													10n		SW	0.16	4.1	Light rain	Prof. John E. Grant.
Sub-Series.																			
St. Johns, Newfoundland					39	3.9	82	N				0	0			0	0	Fair	John Delany.

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,035 feet, or 309.4 meters; Stratford, 1,192 ft., or 360.2 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.70	754.4	29.93	760.2	45	7.2	84	SE	8	3.6			10n		Calm	0.06	1.5	Light rain	
Alpena, Michigan	29.08	738.6	29.72	754.9	39	3.9	100	SW	12	5.4			10n		Calm	0.13	3.3	Light rain	
Atlanta, Georgia	28.78	731.0	29.92	760.0	53	11.7	100	N	4	1.8			Fog		Calm	0.76	19.3	Foggy	
Atlantic City, New Jersey	29.88	758.9	29.90	759.4	56	13.3	100	E	21	9.4			10n		SE	0.20	5.1	Light rain	
Augusta, Georgia	29.76	755.9	29.94	760.5	61	16.1	97	Calm	0	0			10n		Calm	0.41	10.4	Light rain	
Baltimore, Maryland	29.87	758.7	29.92	760.0	44	6.9	93	N	4	1.8			10n		N	0.69	17.5	Light rain	
Barnegat, New Jersey	29.88	758.9	29.90	759.4	56	13.3	93	SE	30	13.4			10s		SE	0.27	6.9	Cloudy	
Bismarck, Dakota	28.37	720.6	30.23	767.8	25	— 3.9	75	NW	7	3.1			10s		NW	Inap.	Inap.	Cloudy	
Boerne, Texas	28.62	726.9			54	12.2	93	N	6	2.7			10s		N	0	0	Cloudy	
Boise City, Idaho	27.38	695.4	30.34	770.6	35	1.7	77	S	4	1.3		2ck	0	Calm		0	0	Fair	
Boston, Massachusetts	29.93	760.2	30.08	764.0	47	8.3	92	SE	25	11.2			10n		SE	0.04	1.0	Light rain	
Brackettville, Texas	28.93	734.8	29 97	761.2	53	11.7	94	NE	3	1.3		10cs	0	NE		0	0	Cloudy	
Breckenridge, Minnesota	29.08	738.6	30.16	766.1	15	— 9.4	82	NW	20	8.9		0	0			0.04	1.0	Clear	
Brownsville, Texas	29.94	760.5	30.01	762.2	59	15.0	94	NE	4	1.8			Fog		Calm	0	0	Foggy	
Buffalo, New York	29.08	738.6	29.79	756.7	37	2.8	100	E	4	1.8			10n		Calm	0.35	8.9	Light rain	
Burkes, Arizona					50	10.0	26	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.75	755.6	30.01	762.2	44	6.7	68	S	4	1.8			10s		SW	0	0	Cloudy	
Cairo, Illinois	29.64	752.8	30.03	762.5	45	7 2	92	SW	8	3.6			10s		SW	0.04	1.0	Cloudy	
Camp Apache, Arizona	24.64	625.8	29.64	752.8	28	— 2.2	57	SE			1	0	0			0	0	Clear	
Camp Grant, Arizona	25.04	636.0	29.84	757.9	45	7.2	39	N			1	0	0			0	0	Clear	
Camp Verde, Arizona	26.93	684.0	30.42	772.7	33	0.6	23	N			1	0	0			0	0	Clear	
Camp o, California	27.52	699.0	30.09	764.3	28	— 2.2	67	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.92	760.0	29.92	760.0	65	18.3	94	Calm	0	0		5cs	2s	W	W	1.38	35.1	Fair	
Cape Henry, Virginia	29.87	758.7	29.89	759.2	62	16.7	94	SE	6	2.7			10s		S	0.89	22.6	Cloudy	
Cape Lookout, N. Carolina	29.92	760.0	29.93	760.2	61	16.1	94	SW	2	0.9			10ks		SW	0.40	10.2	Cloudy	
Cape May, New Jersey	29.88	758.9	29.90	759.4	60	15.6	88	SE	20	8.9			10s		SE	0.14	3.6	Cloudy	
Castroville, Texas	29.27	743.4	29.97	761.2	60	15.6	82	E	5	2.2			10s		E	0	0	Cloudy	
Charleston, South Carolina	29.91	759.7	29.98	761.5	67	19.4	95	SW	6	2.7			10s		S	0.03	0.8	Cloudy	
Cheyenne, Wyoming	24.19	614.4	30.13	765.3	33	0.6	89	Calm	0	0		0	8s		Calm	Inap.	Inap.	Cloudy	
Chicago, Illinois	29.00	736.6	29.68	753.9	45	7.2	68	SW	13	5.8			10ks		SW	0.27	6.9	Cloudy	
Cincinnati Ohio	29.27	743.4	29.92	760.0	47	8.8	77	SW	5	2.2			10ks		SW	0.11	2.8	Cloudy	
Cleveland, Ohio	29.11	739.4	29.84	757.9	38	3.3	91	SW	9	4.0		2ck	5s	Calm	SW	0.03	0.8	Clearing	
Coleman City, Texas	28.34	719.8	30.08	764.0	38	3.3	100	N	4	1.8			Fog			0	0	Foggy	
Columbus, Ohio	29.01	736.8	29.85	758.2	42	5.6	83	S	2	0.9			Fog		Calm	0.83	21.1	Foggy	
Concho, Texas	28.20	716.3	29.94	760.5	40	4.4	82	NE	3	1.3			10s		NE	0	0	Cloudy	
Corsicana, Texas	29.70	754.4	30.18	766.6	48	8.9	93	N	3	1.3			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.14	740.1	29.78	756.4	40	4.4	82	W	20	8.9			10s		W	0.04	1.0	Cloudy	
Decatur, Texas	29.62	737.1	30.22	767.6	44	6.7	92	NW	6	2.7			10s		NW	0	0	Cloudy	
Denison, Texas	29.36	745.7	30.18	766.6	44	6.7	92	NW	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Denver, Colorado	24.95	633.7	30.17	766.3	34	1.1	70	S	2	0.9		0	2s		Calm	0	0	Clear	
Des Moines, Iowa	29.08	738.6	30.00	762.0	32	0.0	69	NW	20	8.9			10s		NW	0	0	Cloudy	
Detroit, Michigan	29.10	739.1	29.77	756.1	41	5.0	74	SW	6	2.7			10s		Calm	0	0	Cloudy	
Dodge City, Kansas	27.59	700 8	29.92	760.0	46	7.8	69	N	16	7.2			10s		N	0	0	Cloudy	
Dubuque, Iowa	29.05	737.9	29.76	755.9	35	1.7	70	NW	12	5.4			10s		NW	0.04	1.0	Cloudy	
Duluth, Minnesota	29.14	740.1	29.84	757.9	28	— 2.2	77	NW	18	8.0			10n		NW	0.28	7.1	Light snow	
Eagle Pass, Texas	29.24	742.7	29.98	761.5	55	12.8	93	SW	1	0.4		0	5s		E	0	0	Fair	
Eastport, Maine	30.19	766.8	30.26	768.6	41	5.0	74	E	4	1.8			10s		E	0	0	Cloudy	
Edinburg, Texas					69	20.6	48	Calm			0		Fog			0	0	Foggy	
El Paso, Texas					56	13.3	27	W	4	1.8		0	0			0	0	Clear	
Erie, Pennsylvania	29.10	739.1	29.52	757.4	40	4.4	91	S	1	0.4			10n		Calm	0.85	8.9	Light rain	
Escanaba, Michigan	29.00	736.6	29.66	753.4	35	1.7	90	N	14	6.3			10s		N	0.12	3.0	Cloudy	
Florence, Arizona	28.54	724.9	30.14	765.5	42	5.6	42	Calm			0	0	0			0	0	Clear	
Fort Craig, New Mexico	25.60	650.2	29.67	753.6	35	1.7	44	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.27	641.8	30.23	767.8	45	7.2	35	W	1	0.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.56	750.8	30.12	765.0	38	3.3	91	N	2	0.9		2ck	Fog	N	N	0	0	Fair	
Fort Griffin, Texas	28.90	734.0	30.21	767.3	43	6.1	92	N	4	1.8			10s		Calm	0	0	Cloudy	
Fort McKavett, Texas	27.89	708.4	29.82	757.4	53	11.7	93	E	6	2.7			Fog			0	0	Foggy	
Fort St. Michael, Alaska																			
Fort Sill, Indian Territory	28.93	734.8	30.09	764.3	35	1.7	90	Calm	0	0		0	2s		Calm	0	0	Fair	
Fredericksburg, Texas	28.34	719.8	29.91	759.7	55	12.8	87	Calm	0	0			10s		Calm	0	0	Cloudy	
Galveston, Texas	30.03	762.7	30.07	763.8	63	17.2	83	N	16	7.2			10s		N	0	0	Cloudy	
Graham, Texas	29.07	738.4	30.16	766.1	41	5.0	91	Calm	0	0			10s		Calm	0	0	Cloudy	
Grand Haven, Michigan	29.02	737.1	29.66	753.4	44	6.7	84	SW	12	5.4			10s		Calm	0.07	1.8	Threatening	
Indianapolis, Indiana	29.07	738.4	29.85	758.2	42	5.6	83	SW	9	4.0			10s		Calm	0.20	5.1	Threatening	
Indianola, Texas	30.05	763.3	30.08	764.0	62	16.7	88	N	18	8.0			10s		N	0	0	Cloudy	
Jacksboro, Texas	29.00	736.6	30.16	766.1	45	7.2	92	W	3	1.3		0	0			0	0	Foggy	
Jacksonville, Florida	29.97	761.2	29.99	761.7	70	21.1	90	SW	10	4.5		0	0			0.06	1.5	Clear	
Keokuk, Iowa	29.20	741.7	29.81	757.2	44	6.7	76	NW	16	7.2		0	7ks		NW	0.02	0.5	Fair	
Key West, Florida	29.98	761.5	30.02	762.5	78	25.6	91	SE	6	2.7		5cs	2s	SE	SE	0	0	Fair	
Kittyhawk, North Carolina	29.88	758.9	29.90	759.4	63	17.2	100	S	9	4.0		0	8s		SW	1.51	38.4	Fair	
Knoxville, Tennessee	28.97	735.8	29 98	761.5	49	9.4	100	Calm	0	0			Fog		Calm	0.27	6.9	Dense fog	
La Crosse, Wisconsin	28.95	735.3	29.69	754.1	37	2.8	100	NW	6	2.7			10s		NW	0.20	5.1	Cloudy	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	35	1.7	52	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.58	751.3	29.93	760.2	54	12.2	87	NE	4	1.8		0	0			0	0	Clear	
Lead City, Dakota	24.96	634.0	30.22	767.6	26	— 3.3	88	NW	8	3.6			10s		Calm	0.21	5.3	Cloudy	
Leavenworth, Kansas	29.16	740.7	30.02	762.5	43	6.1	67	N	16	7.2		0	8ks		NW	0	0	Cloudy	
Los Angeles, California	29.68	753.9	30.03	762.7	48	8.9	49	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.36	745.7	29.92	760.0	47	8.3	70	SW	9	4.0			10s		SW	0.12	3.0	Cloudy	
Lynchburg, Virginia	29.24	742.7	29.92	760.0	48	8.9	77	W	2	0.9		2cs	5ks	Calm	Calm	0.64	16.3	Cloudy	
Madison, Wisconsin	28.64	727.4	29.62	752.3	39	3.9	91	W	10	4.5			10n		W	0.26	6.6	Light rain	
Marquette, Michigan	28.97	735.8	29.67	753.6	36	2.2	90	SW	4	1.8			10n		Calm	0.11	2.8	Light snow	
Mason, Texas	28.44	722.4	30.20	767.1	56	13.3	100	E	2	0.9			10s		E	0	0	Cloudy	
Memphis, Tennessee																			
Milwaukee, Wisconsin	28.91	734.3	29.63	752.6	44	6.7	84	SW	7	3.1			10s		SW	0.04	1.0	Threatening	
Mobile, Alabama	29.97	761.2	30.01	762.2	63	17.2	96	NW	3	1.3			10s		NW	1.10	27.9	Cloudy	
Montgomery, Alabama	29.76	755.9	29.99	761.7	59	15.0	100	NW	4	1.8			Fog		Calm	1.87	47.5	Foggy	
Morgantown, West Virginia	28.80	731.5	29.85	758.2	45	7.2	84	S	18	8.0			10s		SW	0.39	9.9	Cloudy	
Mt. Washington, N. H.	23.67	601.2	30.03	762.7	21	— 6.1	100	SE	36	16.1			Fog		SE	0	0	Foggy	
Nashville, Tennessee	29.47	748.5	30.01	762.2	50	10.0	86	SW	2	0.9			10s		W	0.16	4.1	Threatening	
New Haven, Connecticut	29.86	758.4	29.97	761.2	52	11.1	86	E	12	5.4			10n		E	0.03	0.8	Light rain	
New London, Connecticut	29.99	761.7	30.04	763.0	51	10.6	93	SE	20	8.9			10n		E	0.06	1.5	Light rain	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	65	18.3	84	NW	8	3.6		2k	5ks	S	S	1.25	31.7	Fair	
Newport, Rhode Island	29.99	761.7	30.04	763.0	51	10.6	93	SE	21	9.4			10n		SE	0.15	3.8	Light rain	
New York, New York	29.75	755.6	29.93	760.2	51	10.6	100	E	16	7.2			10n;fg		E	0.11	2.8	Light rain	
Norfolk, Virginia	29.86	758.4	29 92	760.0	60	15.6	100	Calm	0	0			10n		Calm	0.38	9.7	Light rain	
North Platte, Nebraska	27.28	692.9	29.94	760.5	37	2.8	71	NW	20	8.9			10s		NW	0	0	Cloudy	
Olympia, Washington Ter.	30.13	765.3	30.17	766.3	42.0	5.6	83	Calm	0	0			10s			0	0	Cloudy	
Omaha, Nebraska	28.94	735 1	30.10	764.5	30	— 1.1	68	NW	32	14.3			10s		NW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.51	750.3	29.86	758.4	45	7.2	76	S	8	3.6	.....	.....	10n	.....	Calm	0.45	11.4	Light rain	
Pembina, Dakota	29.30	744.2	30.22	767.6	1	—17.2	86	NW	4	1.8	.....	.....	10s	.....	Calm	0.46	11.7	Cloudy	
Philadelphia, Pa	29.86	758.4	29.91	759.7	51	10.6	93	E	6	2.7	.....	.....	10n;fg	.....	E;calm	0.27	6.9	Heavy rain	
Phœnix, Arizona	28.90	734.0	.....	.....	50	10.0	26	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.78	449.8	29.98	761.5	9	—12.8	36	NW	16	7.2	.....	5cs	0	Calm	.....	0	0	Fair	
Ploche, Nevada	24.22	615.2	29.99	761.7	42	5.6	42	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.04	737.6	29.85	758.2	42	5.6	83	W	2	0.9	.....	.....	10s	.....	W	0.41	10.4	Cloudy	
Port Huron, Michigan	29.10	739.1	29.76	755.9	40	4.4	91	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Maine	30.10	764.5	30.15	765.8	48	8.9	70	SE	24	10.7	.....	10k	0	S	.....	0	0	Cloudy	
Portland, Oregon	30.05	763.3	30.16	766.1	44.0	6.7	92	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.85	631.0	30.24	768.1	31	— 0.6	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.42	747.3	30.27	768.8	46	7.8	92	N	1	0.4	.....	8k	0	NE	.....	0.01	0.3	Cloudy	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	74	23.3	86	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Red Bluff, California	29.59	751.1	30.05	763.3	51	10.6	59	NW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.84	757.9	30.06	763.5	63	17.2	67	N	.....	.....	1	0	Sm'e	.....	Calm	0	0	Smoky	
Rochester, New York	29.20	741.7	29.81	757.2	48	8.8	93	SE	5	2.2	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
Roseburg, Oregon	29.55	750.6	30.14	765.5	36.5	2.5	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	29.95	760.7	30.04	763.0	47.5	8.6	67	SW	4	1.8	.....	0	Sm'e	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.32	744.7	29.90	759.4	41	5.0	82	SW	15	6.7	.....	0	1s	.....	.....	0	0	Clear	
St. Marks, Florida	29.94	760.5	29.96	761.0	71	21.7	95	S	4	1.8	.....	0	7s	.....	NW	0.06	1.5	Fair	
St. Paul, Minnesota	28.92	734.6	29.76	755.9	38	0.6	79	N	16	7.2	.....	.....	10s	.....	N	0.13	3.3	Cloudy	
Salt Lake City, Utah	25.85	656.6	30.18	766.6	38.5	3.6	59	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.40	746.7	29.98	761.5	57	13.9	94	NE	5	2.2	.....	.....	10s	.....	Calm	0	0	Threatening	
San Diego, California	29.97	761.2	30.05	763.3	46	7.8	54	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.14	740.1	29.82	757.4	42	5.6	83	SW	7	3.1	.....	10k	0	SW	.....	0	0	Cloudy	
Sandy Hook, New Jersey	29.88	758.9	29.92	760.0	54	12.2	93	SE	34	15.2	.....	.....	10n	.....	SE	0.21	5.3	Light rain	
San Francisco, California	29.89	761.7	30.05	763.3	52	11.1	86	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	32	0.0	40	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.88	758.9	29.97	761.2	67	19.4	95	SW	6	2.7	.....	2ck	2ks	SW	SW	0.39	9.9	Fair	
Shreveport, Louisiana	29.89	759.2	30.12	765.0	50	10.0	100	NW	4	1.8	.....	.....	10s	.....	Calm	0.10	2.5	Cloudy	
Silver City, New Mexico	24.36	618.7	.....	.....	40	4.4	47	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.92	760.0	29.96	761.0	65	18.3	94	S	3	1.3	.....	.....	10s	.....	SW	0.18	4.6	Cloudy	
Springfield, Massachusetts	29.87	758.7	30.00	762.0	46	7.8	84	E	4	1.8	.....	.....	10n	.....	SE	0.03	0.8	Light rain	
Stockton, Texas	27.09	688.1	30.09	764.3	35	1.7	53	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass.	30.05	763.3	30.11	764.8	48	8.9	85	SE	20	8.9	.....	.....	10n	.....	SE	0.04	1.0	Light rain	
Toledo, Ohio	29.11	739.4	29.78	756.4	45	7.2	76	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	48	8.9	95	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	29.94	760.5	29.97	761.2	70	21.1	90	S	9	4.0	.....	0	5ks	.....	SW	0.32	8.1	Fair	
Umatilla, Oregon	29.90	759.4	.....	.....	37.0	2.8	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	29	— 1.7	100	Calm	.....	.....	0	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.19	741.4	30.01	762.2	55	12.8	81	NE	4	1.8	.....	0	5s	.....	NE	0	0	Fair	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.45	11.4	.....	
Virginia City, Montana	24.45	621.0	29.93	760.2	30	— 1.1	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.70	754.4	30.08	764.0	45	7.2	85	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.79	756.7	29.91	759.7	46	7.8	100	E	4	1.8	.....	.....	10n	.....	SW	0.82	20.8	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	38	3.3	38	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.86	758.4	29.94	760.5	60	15.6	94	Calm	0	0	.....	.....	10s;fg	.....	SW;Calm	0.13	3.3	Cloudy	
Winnemucca, Nevada	25.83	656.1	30.19	766.8	34	1.1	61	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass.	30.01	762.2	30.06	763.5	51	10.6	79	SE	20	8.9	.....	.....	10n	.....	SE	0.12	3.0	Light rain	
Yankton, Dakota	28.89	733.8	30.26	768.6	26	— 3.3	75	NW	22	9.8	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Yuma, Arizona	29.82	757.4	29.99	761.7	51	10.6	53	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.71	754.6	29.76	755.9	6.5	—14.2	100	NW	20	8.9	.....	.....	9s	.....	NW	0.45	11.4	Cloudy	J. Fortescue, W. Wood.
Fayettville, Ark.	28.51	724.3	29.96	761.0	40	4.4	91	.....	.....	.....	.....	.....	.....	.....	.....	Blank	Blank	.....	J. B. Gordon.
Havana, Cuba, W. I.	29.96	761.0	29.98	761.5	78	25.6	86	E	2.4	1.1	.....	8c	2s	W	E	0	0	Foggy	[illegible]
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	82	27.8	70	NE	4	1.8	.....	8c	2ks	E	.....	0.76	19.3	Clearing	G. O. Gellich.
Kingston, Jamaica, W. I.	30.10	764.5	30.11	764.8	80	26.7	91	Calm	0	0	.....	5c	2s	Calm	SE	0	0	.....	James Gall.
Navassa, W. I.	29.86	758.2	29.93	760.2	83	28.3	.....	NE	5.8	2.6	.....	.....	.....	.....	.....	0.30	7.6	Fair	F. M. Everett.
Paramaribo, D.Guiana, S.A.	29.97	761.2	29.97	761.2	84	28.9	79	NE	.....	.....	2	5k?	8k?	E	.....	2.070	52.58	½Cloudy	C. J. Herring.
Medellin, Colombia, S. A.	25.20	640.1	.....	.....	66.5	19.2	82	Calm	0	0	.....	.....	10s;ks	.....	.....	0	0	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.78	756.4	30.08	764.0	81	27.2	87	SE	.....	.....	.....	k	.....	.....	.....	.....	.....	Showery	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1131.3 feet or 344.8 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,669 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066.8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.8 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayettville, Ark., 1,422 ft., or 433.4 m.; Fort Davis, 5,203 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 ?) m.; Fort Sill, 1,100 ?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft.,or 1,915.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,580 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m.. Santa Fé, 6,802.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,896 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 ?) ft., or 944.9 (?) m.; Tucson, 2,545 (?) ft., or 775.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.32 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in.; Santa Fe, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer. As read off. Inches.	Barometer. As read off. Millimeters.	Barometer. Attached Thermometer. Fahrenheit.	Barometer. Attached Thermometer. Centigrade.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Low'r From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
Navy Yard, Pensacola, Fla.	30.08	764.0	65.5	18.6	66	18.9	87	NW	1	0.4	.....	.....	10	.....	SW	0	0	.....	.....	Threatening	
NavyYard,Portsmouth,N.H	30.05‡	763.8‡	.....	.....	47	8.3	77	SE	8	3.6	.....	.....	10	.....	.....	0.55	14.0	.....	.....	Overcast.....	
Naval Hospital, Yokohama, Japan.....	30.07*	763.8*	62	16.7	54.6	12.6	68	NW	.....	.....	1	.....	1k	.....	Calm	0	0	.....	.....	Fair.....	
Adams. Valparaiso, Chili.....	30.01	762.2	61	16.1	61	16.1	82	Calm	.....	.....	0	.....	1	.....	.....	.....	.....	Smooth	.....	Fair	
Alaska, Payta, Peru.....	30.08	764.0	69	20.6	67	19.4	74	SE	.....	.....	2	.....	2	.....	SE	0	0	Smooth	.....	D. clouds.....	
Alliance, Smyrna, Turkey.....	29.99‡	761.7‡	.....	.....	73	22.8	59	W	.....	.....	0-1	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
Arhuelot. Nagasaki, Japan.....	30.24	768.1	54	12.2	55	12.8	93	SE?	.....	.....	2	.....	0	.....	.....	.....	.....	Smooth	.....	Clear.....	
Canonicus, New Orleans, La.....	30.02	762.5	51	10.6	66	18.9	89	SW	.....	.....	2	.....	10	.....	.....	.....	.....	...	.....	Cloudy.....	
Colorado. New York, N. Y.....	29.95‡	760.7‡	.....	.....	52	11.1	93	ESE	6	2.7	.....	.....	10	.....	ESE	0.13	3.3	.....	.....	Rain and fog	
Constitution, Havre, France.....	.....	.....	.....	.....	48	8.9	78	W	.....	.....	5	.....	8	.....	W	.....	.....	.....	.....	Cloudy.....	
Despatch, Constantinople, Turkey	29.98‡	761.5‡	.....	.....	72	22.2	54	SE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Essex, Cape Town.....	30.18	766.6	67	19.4	71	21.7	90	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	.....	.....	Fair.....	
Franklin, Norfolk, Va.....	30.02	762.5	68	20.0	61	16.1	??	S	3	1.3	.....	.....	8	.....	SW	0.33	8.4	.....	.....	Cloudy.....	
Gettysburg Jaffa, Syria.....	29.89‡	759.2‡	.....	.....	77	25.0	77	NNW	.....	.....	3	.....	0	.....	.....	0	0	Smooth	.....	Blue sky.....	
Guard. N. 19° 39', W. 53° 45'.....	30.03	762.7	83	28.3	82	27.8	79	NE	....	.....	5	.....	2	.....	NE	.....	.....	Mod'ate	NE	Clear.....	
Hartford, St. Catherine Strait.....	30.18	766.6	71	21.7	71	21.7	53	SSW	2.4	1.1	.....	.....	2	.....	.....	0	0	Smooth	.....	Clear.....	
Marion, N. 43° 00', E. 9° 21'...	29.82	757.4	62	16.7	62	16.7	72	WSW	.....	.....	8	.....	10	.....	wsw	Light	Light	Rough	.....	Light rain...	
Michigan, Erie, Pa.....	29.93†	760.2†	.....	.....	39	3.9	91	SE	.....	.....	3	.....	8	.....	W	.....	.....	.....	.....	Cloudy.....	
Monocacy, Yokohama, Japan	30.13‡	765.3‡	.....	.....	57	13.9	63	NNW	.....	.....	2-3	.....	2	.....	NNW	.....	.....	.....	.....	Fair	
New Hampshire, Port Royal, S. C.....	30.12	765.0	72	22.2	71	21.7	95	SW	13	5.8	.....	.....	8	.....	SW	0.17	4.3	.....	.....	Cloudy	
Onward, Callao, Peru.....	30.08†	764 0†	.....	.....	64	17.8	83	SE	.....	.....	2	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.27	768.8	71	21.7	46	7.8	77	WSW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
Passaic, Washington, D. C.....	.....	.....	.....	.....	47	8.3	85	NW	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy.....	
Plymouth. Santa Cruz, W. I.....	30.10	764.5	84	28.9	84	28.9	79	NE	.....	.....	2	.....	10	.....	E	.....	.....	Smooth	.....	Cloudy	
Powhatan, New York, N. Y..... ..	29.95‡	760.7‡	.....	.....	54	12.2	87	ESE	3.6	1.6	.....	.....	10	.....	.....	0.35	8.9	.....	.....	Rainy	
Quinnebang, Norfolk, Va...	29.94‡	760.5‡	.....	.....	60	15.6	100	SW	.....	.....	1	.....	10	.....	wsw	.....	.....	.....	.....	Drizzling.....	
Ranger. Hong-Kong, China.....?	30.24	768.1	76	24.4	75	23.9	72	E	.....	.....	4	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
Rio Bravo, Brownsville, Texas.....	29.90	759.4	62	16.7	63	17.2	78	N	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy.....	
Sabine, Annapolis, Md	29.92‡	760.0†	.....	.....	43	6.1	100	N	.....	.....	1	.....	10	.....	.....	0.45	11.4	.....	.....	Foggy	
Saratoga, Philadelphia, Pa.....	29.90	759.4	.....	.....	49	9.4	85	NNE	.....	.....	2	.....	10	.....	.....	Heavy	Heavy	.....	.....	Rainy	
St. Louis, League Island, Pa	29.86	758.4	63	17.2	52	11.1	93	SE	10	4.5	.....	.....	10	.....	NW	0.1	3.	.....	.....	Raining	
Supply, Havre, France.....	29.92	760.0	55	12.8	51	10.6	65	WNW	.....	.....	0-1	.....	8	.....	.....	.....	.....	.....	.....	Cloudy.....	
Trenton, Villafranca, France.....	29.89‡	759.2‡	.....	.....	61	16.1	66	SSW	.....	.....	4-5	.....	5	.....	W	0	0	.....	.....	Squally	
Vandalia, Villafranca, France	29.78‡	756.4‡	.....	.....	62	16.7	52	WSW	.....	.....	3-6	.....	2	.....	wsw	.....	.....	Mod'ate	SSW	Squally.....	
Wabash, Boston, Mass.....	.....	.....	.....	.....	49	9.4	85	SE	20	8.9	.....	.....	8	.....	.....	0	0	.....	.....	Overcast.....	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4; weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. *It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell.		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, Hong-Kong China		30.14*	765.5*	72	22.2	100	SE			5		4		SE				Overcast	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, Esquimault, B. C.		30.21*	767.3*	64	12.2	74	NW			1		10			0			Overcast	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic																			Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic, N. 46° 0', W. 40° 30'		29.69*	754.1*	54	12.2	??	NW			7				NNW	0	Heavy	N	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 31° 35', W. 149° 44'		29.68*	758.9*	73	22.8	85	Var.			1		ks		SW		Mod'ate	SW	Showery	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic																			Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 50° 25', W. 1° 15'		29.75	755.6	51.0	10.6	65	WNW			6		5		NW	0	2	NW		Capt. Undütsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OF MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Lo'wr	Upper.	Lower.					
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—		Character.	Direction From—		

AMERICAN S. S. CO. MARINE SERIES.

Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.

S. S. Indiana, N. 45° 02′, W. 41° 09′		29.92*	760.0*	57	13.9	94	N?			6		9		N	Light	Heavy	NNW	Cloudy	Captain Sargent.
S. S. Ohio, N. 47° 28′, W. 51° 38′ 30″		30.39	771.9	43	6.1	83	NNW			3		6?		NNW		Light	SE	Clear?	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Rendle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co., Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 19° 38′, W. 78° 50′		29.90	759.4	85	29.4	76	E	13	5.8			5k		E	0	Short sea		D. clouds	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON OCTOBER 31, 1878.

7:35 A. M. WASHINGTON mean time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:20 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE OF GOOD HOPE mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI, (YEDDO,) mean time.
10:23 P. M. MELBOURNE mean time.

ALGERIAN SERIES.

Furnished by the coöperation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Nemours			30.05	763.3	68.9	20.5	69	W			1		2			0	0	Fair	Kesxuche.
Algiers			30.01	762.3	72.0	22.2	42	NW			3		1			0	0	Very fair	Tourillere.
La Calle			30.07	763.7	74.3	23.6	55	WNW			1		3			0	0	Pretty fair	Foufrede.
Tunis			30.09	764.3	73.2	22.9	43	W			4		0			0	0	Clear	Jacques.
Sfax			30.18	766.5	71.6	22.0		NW			5		2			0	0	Fair	Gau.
Saida			30.08	764.1	68.4	20.2	54	SW			5		2			0	0	Fair	Herbin.
Tebessa			30.02	762.5	64.2	17.9	68	WSW			3		3			0	0	Pretty fair	Watrin.
Geriville			30.05	763.2	65.8	18.8	45	SSW			3		4			0	0	Cloudy	Brugniaux.
Laghouat			30.13	765.4	62.6	17.0	77	NNE			1		4			0	0	Cloudy	Bertrand.
Biskra			30.16	766.0	72.5	22.5	54	NW			1		4			0	0	Cloudy	Chanvaux.

NOTE—In the originals the distinction between upper and lower clouds, as to amount, is not made The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,919.9? feet; Tebessa, 1,088? m.,or 3,569.4? ft.; Geriville, 1,360? m., or 4,461.7? ft.

AUSTRIAN SERIES.

Furnished by the coöperation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.42	747.3	29.99	761.7	42.6	5.9	78	SW			2		10			0	0		Prof. Ivan Stoklr.
Cracow, I. R. Observatory	29.06	738.0	29.84	757.8	42.4	5.8	79	W			3		10			0	0		Dr. Wierzbiski
Eperies	28.94	735.0	29.84	757.8	41.4	5.2	87	Calm			0		10			0.157	4.00		Julius Mikolik.
Gratz	28.67	728.3	29.95	760.7	43.7	6.5	66	SSW			2		2			0.240	6.10		Andreas Rospini.
Hermannstadt	28.30	718.7	29.74	755.5	63.0	17.2	50	SSE			1		1			0	0		Prof. A. Gottschling.
Kremsmünster	28.50	724.0	29.87	758.7	42.4	5.8	52	E			2		3			0	0		Prof. C. Wagner.
Lemberg	28.76	730.5	29.75	755.6	48.6	9.2	87	NW			2		10			0.043	1.1		Dr. T. Stanecki.
Pola	29.33	757.7	29.95	760.6	52.2	11.2	53	W			1		2k			0.563	14.3		I.R.Hydrographic Office
Szathmar	29.47	748.4	29.94	760.4	46.3	7.4	91	S			3		10			0.154	3.9		Julius Csics, S. J.
Szegedin	29.65	753.0	29.93	760.3	45.5	7.5	79	SW			2		8			0.207	5.25		Karl Stancel.
Trieste	29.88	758.9	29.98	761.5	50.0	10.0	64	NE			1		1			0.087	2.2	Rainy	P. Busin.
Vienna	29.19	741.5	29.92	760.0	44.8	7.1	49	W			2		1			0	0		I. R. Central Met. Obs'y.

NOTE—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of observation. The distinction between upper and lower clouds is not made. At Lemberg the rain-fall is measured at 7 p. m., local time; at Trieste at 7 a. m. of the following day; at Szathmar apparently on the following morning. The elevation of Gratz is 343.5 meters, or, 1,126.9 feet, Hermannstadt, 407.8 m., or 1,337.9 ft.; Kremsmünster, 383.6 m., or 1,258.5 ft. At Eperies the observations have been taken at 2:0, instead of 2:8 p. m.; Gratz, at 2:0, instead of 1:45, p. m.; Szathmar at 2:0 instead of 2:15 p. m., local time.

BELGIAN SERIES.

Furnished by the coöperation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	28.80	718.8	29.85	758.3	34.2	1.2	92	WNW			3		10			0.083	2.1		Prof. M. Passau.
Brussels	29.04	752.8	29.86	758.1	41.4	5.2	72	W			2		2		NNW	0	0		Royal Observatory
Furnes	29.85	758.1	29.87	758.7	44.2	6.8	83	WSW			3		7					Light rain	M. E. de Cae
Maeseyck	29.71	754.5	29.84	757.8	42.4	5.8	83	W			2		10			0	0		M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371.4 feet. At Arlon the observations have been taken at 1:0, instead of 1:6, p. m.; Furnes, 1:0, instead of 0:54, p. m. Maeseyck, 1:0, instead of 1:6 p. m., local time.

BRITISH SERIES.

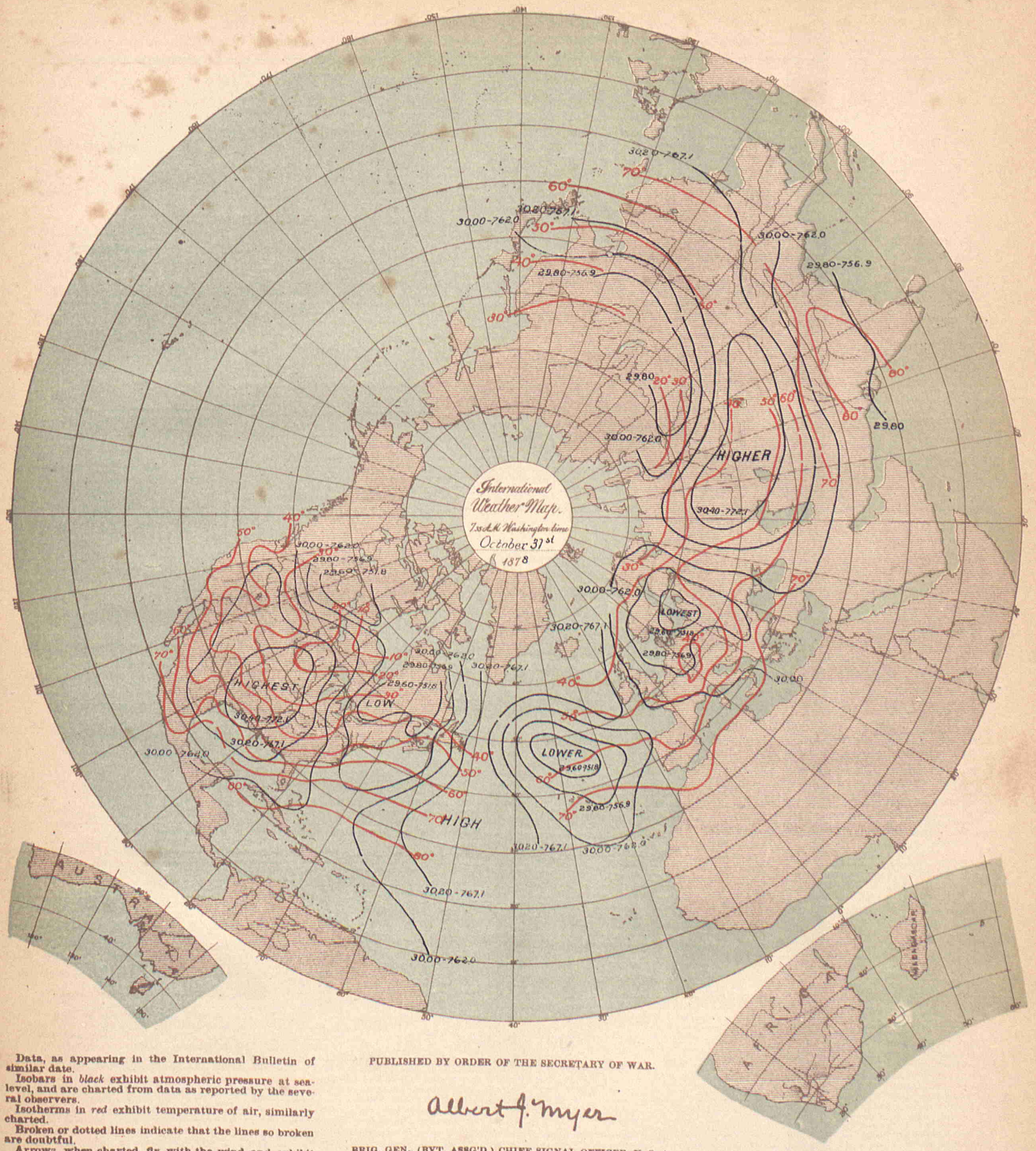
Furnished by the coöperation of Robert H. Scott, Esq., F. R. S., Secretary of the Meteorological Council, London, Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.94	760.5	43.3	6.3	.....	N	22	9.8	.....	.....	2	.....	.....	0.150	3.81	Blue sky	W. Boswell.
Ardrossan	29.97	761.2	29.99	761.7	44	6.7	.....	NNE	.....	.....	2	.....	4	.....	.....	.....	.....	D. clouds	George Carrick.
Armagh, Observatory	.....	.....	30.09	764.3	40.3	4.6	.....	NNW	7	3.1	.....	.....	7	.....	.....	.....	.....	D. clouds	S. Call.
Bidston, (Liverpool Obs.)	.....	.....	29.96	761.0	42.5	5.8	.....	NNW	14	6.3	.....	.....	10	.....	.....	.....	.....	Raining	John Hartnup.
Bolton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Mackereth.
Bradford, Yorkshire	29.50	749.3	29.90	759.4	44.1	6.7	.....	NW	.....	.....	3	.....	10	.....	.....	0.03	0.8	Overcast	J. McLandsborough.
Bridgetown, (Barbados)	29.87	758.7	29.90	759.4	83.5	28.6	.....	NE	.....	.....	3	.....	3	.....	.....	.....	.....	D. clouds	Pvt. G. W. Roberts, A.
Cambridge, Observatory	.....	.....	29.85	758.2	44.0	6.7	.....	WNW	.....	.....	1	.....	5	.....	.....	.....	.....	D. clouds	H. Todd. [H.O.
Cardington	.....	.....	29.88	758.9	42.0	5.6	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Overcast	John McLaren.
Chatham, School M. E.	29.74	755.4	29.87	758.7	43.2	6.2	.....	NW	.....	.....	1	.....	3	.....	.....	.....	.....	Foggy	Lt. G. W. Morris, R. E.
Dartmoor	28.42	721.9	29.92	760.0	44.0	6.7	.....	N	.....	.....	2	.....	7	.....	.....	.....	.....	Gloomy	Alexander Watt.
Donaghadee	29.99	761.7	30.01	762.2	44	6.7	.....	NNE	.....	.....	5	.....	5	.....	.....	.....	.....	D. clouds	J. Mac Gowan.
Dover	29.84	757.9	29.87	758.7	44	6.7	.....	NW	.....	.....	3	.....	6	.....	.....	.....	.....	Misty	J. Costello.
Falmouth, Observatory	29.75	755.6	29.98	761.5	49.8	9.9	.....	N	.....	.....	3	.....	7	.....	.....	.....	.....	Overcast	The Staff.
Fort Napier, (Natal)	27.66	702.6	29.98	761.5	81.0	27.2	.....	E	.....	.....	2	.....	8	.....	.....	.....	.....	D. clouds	Pvt. G. Salmon, A.H.C.
Free Town, (Sierra Leone)	29.65	753.1	29.88	758.9	87	30.6	.....	E	.....	.....	1	.....	3	.....	.....	.....	.....	D. clouds	
Galway, Queen's College	.....	.....	30.10	764.5	45	7.2	.....	NNW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Prof. A. H. Curtis.
Gibraltar, (Mediterranean)	29.97	761.2	30.02	762.5	.....	.....	.....	E	.....	.....	3	.....	2	.....	.....	.....	.....	Blue sky	Corpl. Wm. Allen, A.H.C.
Glasgow, Observatory	29.77	756.1	29.98	761.5	42.1	5.6	.....	NNW	.....	.....	1	.....	7	.....	.....	.....	.....	D. clouds	D. G. Maclean.
Great Yarmouth	29.80	756.9	29.81	757.2	42	5.6	.....	WNW	.....	.....	2	.....	4	.....	.....	.....	.....	Misty	G. T. Watson.
Greenwich, Royal Obs'y	29.71	754.6	29.88	758.9	41.5	5.3	.....	WSW	.....	.....	1	.....	2	.....	.....	.....	.....	Blue sky	The Staff, for G. B. Airy.
Guernsey	29.72	754.9	29.94	760.5	49.5	9.7	.....	NNW	.....	.....	2	.....	3	.....	.....	Blank	Blank	D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	.....	.....	30.01	762.2	52	11.1	.....	N	.....	.....	2	.....	k	.....	.....	0.27	6.9	Showery	M. P. Moyle.
Holyhead	29.93	760.2	29.99	761.7	46	7.8	.....	N	.....	.....	5	.....	8	.....	.....	.....	.....	D. clouds	John Tilston.
Jersey	29.66	753.4	29.96	761.0	48.5	9.3	.....	NNW	.....	.....	2	.....	5	.....	.....	.....	.....	D. clouds	J. Fisher.
Kew, Observatory	29.85	758.2	29.89	759.2	43.0	6.1	.....	NW	6	2.7	.....	.....	6	.....	.....	.....	.....	D. clouds	The Staff.
Kingstown	30.03	762.7	30.06	763.5	44	6.7	.....	NW	.....	.....	5	.....	2	.....	.....	.....	.....	Blue sky	George Mitchell.
Leicester, Museum	.....	.....	29.88	758.9	42.2	5.7	.....	N	.....	.....	1	.....	10	.....	.....	.....	.....	Drizzling	Wm. J. Harrison, F.G.S.
Malta, (Mediterranean)	29.97	761.2	30.04	763.0	71	21.7	.....	NW	.....	.....	3	.....	2k	.....	.....	.....	.....	Blue sky	Sergt. Beckett.
Nairn	29.92	760.0	30.01	762.0	40	4.4	.....	NNW	.....	.....	5	.....	10	.....	.....	.....	.....	Overcast	W. D. Penny.
Nassau, (Bahamas)	.....	.....	30.04	763.0	76.5	24.7	.....	SE	.....	.....	0	.....	8	.....	.....	.....	.....	D. clouds	C. S. Duncombe.
Nottingham, Observatory	29.70	754.4	29.90	759.4	43.7	6.5	.....	NNW	.....	.....	3	.....	10;d	.....	N	0.031	0.79	Overcast	E. J. Lowe, F. R. S.
Perth, St. Mary's College	29.36	745.7	29.90	759.4	42.2	5.7	.....	NNW	.....	.....	4-5	.....	10	.....	.....	.....	.....	Overcast	Rev. Stephen Whitty.
Oxford, Radcliffe Obs'y	.....	.....	29.90	759.4	42	5.6	.....	NW	.....	.....	1	.....	10	.....	.....	.....	.....	Misty	H. E. Bellamy.
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Merrifield.
Roche's Point	30.06	763.5	30.10	764.5	46	7.8	.....	N	.....	.....	5	.....	2	.....	.....	.....	.....	Fine	W. Kennedy.
Saint Ann's Head	29.84	757.9	30.01	762.2	43	6.1	.....	N	.....	.....	3	.....	10	.....	.....	.....	.....	Raining	John C. Walker.
Sandwick Manse, Orkneys	.....	.....	29.98	761.5	40.3	4.6	.....	N	34	15.2	.....	.....	10	.....	.....	.....	.....	Raining	Rev. C. Clouston, LL. D.
Scutari, Cemetery, (Turkey	.....	.....	29.87	758.7	69.8	21.0	.....	SW	.....	.....	1	.....	9	.....	.....	Blank	Blank	D. clouds	Sergt. W. H. Lyne.
Sheffield	29.61	752.1	29.90	759.4	44.5	6.9	.....	NNE	.....	.....	1	.....	10	.....	.....	0	0	Overcast	W. F. Cooper.
Silloth, Rectory	29.94	760.5	29.97	761.2	47.4	8.6	78	NW	.....	.....	3	.....	8	.....	.....	0	0	D. clouds	C. Edith Redford.
Stonyhurst Observatory	29.54	750.3	29.94	760.5	42.4	5.8	.....	NW	.....	.....	2	.....	10	.....	.....	.....	.....	Overcast	Rev. S. J. Perry.
Strathfield Turgiss	29.67	753.6	29.90	759.4	44.9	7.2	.....	W	.....	.....	1	.....	6	.....	.....	.....	.....	D. clouds	Rev. C. H. Griffith, F.M.S.
Thurso	29.91	759.7	29.98	761.5	43	6.1	.....	NNE	.....	.....	6	.....	7	.....	.....	.....	.....	D. clouds	John Trotter.
Truro, Royal Institution	.....	.....	29.97	761.2	54	12.2	.....	N	.....	.....	7	.....	5	.....	.....	.....	.....	D. clouds	W. Newcombe.
Valencia, Observatory	30.13	765.3	30.16	766.1	46.5	8.1	.....	N	.....	.....	4	.....	4	.....	.....	.....	.....	D. clouds	The Staff.
Sub-Series.																			
Hobart Town, (Tasmania)	.....	.....	30.12	765.0	54.0	12.2	77	S	.....	.....	3	.....	10kn	.....	.....	0.03	0.8	Covered	Francis Abbott, F.R.A.S.
Leith, Restalrig Park	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Andrew Gibb.
Mauritius, Observatory	29.81	757.2	30.00	761.9	79.5	26.4	47	NE	11.0	4.9	.....	0	2	.....	SW	0	0	Fine	C. Meldrum.
Melbourne, Observatory	30.12	765.0	30.21	767.3	52.0	11.1	69	SSE	14	6.3	.....	.....	9	.....	SW	0	0	Dull	R. L. J. Ellery.
Monach L't-house, (Hebrides	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Youngclause.
North Unst, (Shetland Is.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Burnet.

Note—Generally, the originals do not give the relative humidity, rain-fall or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Stornoway, Leith, Monach and North Unst as read off, Freetown reduced to freezing but not to sea-level; amount of cloudiness for Holyhead, Nairn and Stornoway by the scale 0 to 4. The wind-force is given by the scale 0tc 12 in the official series; 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Aberdeen at 10 a. m.; Bradford, 9 a. m.; Helston, 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m. local time; Sheffield, (following day) 8 a. m. The elevation of Dartmoor is 1,400 feet, or 426.7 meters; Fort Napier, 2,200 ft. or 670.6 m.

Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from-	Weather	Observer
Brig Catherine, N. 46° 20', W. 37° 50'	8	.....	Drizzling	Capt. Alex. Wilson.
Barque Commewyne, N. 33° 15', W. 35° 45'	8	N	Showery	Capt. A. Buchan.
S. S. Gordon Castle, N. 48° 40', W. 28° 50'	8	E	Squally	Capt. W. Waring.
Barque Margaret Smith,	.....	.....	.....	Capt. D. W. A. Quaile
Schooner Traveller	.....	.....	.....	Capt. Alex. Simpson.
Barque Virginia	.....	.....	.....	Capt. W. Spratly.

Note.—The originals give the wind-direction to 32 points; the force by the Beaufort scale, 0 to 12; the distinction between upper and lower clouds is made as to direction but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used by these observers have been generally carefully compared and corrected



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST. BOSTON.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the coöperation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Punta Arenas																			Mr. Ansart.
San José	26.24	666.5	29.96	761.0	65.8	18.8	92	SE			2	4c	2s			0.70	17.8		Federico Maison.

NOTE.—In the originals, the barometer is given as read off. Its instrumental error is not known; it is reduced to sea-level by the use of a constant 3.72 inches; the elevation of San José is 1,145 meters, or 3,756.4 feet. The distinction between the upper and lower clouds is not always made. The rain-fall is apparently measured at following midnight, and, in the originals, given in Spanish inches. It is not certain that the remarks in the weather column refer to the moment of observation.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.65	753.0	29.69	754.2	45.5	7.5	72	NW			2		2						
Fanöe	29.71	754.6	29.73	755.1	43.0	6.1	79	S			2		1						
Godthaab, (Greenland)																			
Stykkisholm, (Iceland)																			
Thorshavn, (Faröe)	30.24	768.0	30.27	768.9	36.0	2.2	63	N			4		5						
Vestervig	29.63	752.5	29.60	756.8	46.4	8.0	92	SE			2		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, weather by the Vienna symbols; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.40	746.7	29.95	760.7	44.6	7	91	W			1		3		W	0.268	6.8	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	29.72	754.8	29.83	757.6	48.2	9.0	89	NW			2		2		NE	0.331	8.4	Slightly cl'dy	Bonvallet, Director.
Avignon, Normal School	29.94	760.5	30.02	762.5	51.8	11	46	NNE			1		5		W	0	0	Cloudy	M. Giraud, Director.
Bar-sur-Seine	29.34	745.3	29.91	759.8	43.7	6.5	91	W			2		8kn		W	0.488	12.4	Very cloudy	C. Saillard.
Beauvais, Normal School	29.62	752.4	29.91	759.8	46.2	7.9	80	NW			1		6		NW	0.39	10.	Cloudy	Frere Eugene Marie, Director.
Besançon, Normal School	29.04	737.6	30.00	761.9	38.8	3.8	87	SSW			6		10		SW	0.091	2.3	Covered	M. Carre, Director.
Bourg-en-Bresse, N. School	29.13	739.9	30.04	763.0	42.6	5.9	70	S			6		10kn		W	0.12	3.	Sleeting	M. Marlot, Director.
Bourges, Normal School	29.40	746.8	29.97	761.2	39.7	4.3	90	WSW			1		5kn		WSW	0.020	0.50	Cloudy	A. Waquet, Director.
Brest, Naval Observatory	29.69	754.2	29.91	760.4	50.4	10.2	81	N			2		9		N	0.059	1.50	Raining	M.de Rermaur, Director.
Carcassonne, Normal School	29.61	752.0	30.02	762.6	51.4	10.8	85	W			3		2	W	W	0.59	15.	Slightly cl'dy	Septembre, Director.
Caen	29.83	757.6	29.90	759.5	50.4	10.2	70	WNW			1		5		WNW	0.35	9.	Cloudy	M. Lair, Director.
Chartres, Normal School	29.30	744.2	29.87	758.6	49.6	9.8	79	NW			1		4		SW	0.91	23.		M. Vergier, Director.
Châlons-sur-Marne, N. Sch'l	29.64	753.3	29.87	758.6	45.0	7.2	80	NNW			3		5ck		NW	0.004	0.1	Cloudy	T. Leloup, Director.
Clermont-Fd., Puy de D. Obs					45.3	7.4	64	W			1		8		NW	0.118	3.0	Very cloudy	Allnard, Director.
Commercy, Normal School	29.01	736.8	29.92	759.9	37.6	3.1	88	W			3		ckn		W	0.390	9.9		Dr. Coulet, Director.
Commune de Grèsque*, Z.	28.91	734.4	30.06	763 4	48.2	9.0	63	W			2		8	W		0.094	2.4	¾ covered	M. King.
Grenoble, Normal School	29.21	741.9	30.00	762.0	39.9	4.4	83	E			1		10n			0.20	5.	Covered	M. Ablard, Director.
La Roche-sur-Yon, N. Schol	29.79	756.6	30.01	762.2	51.8	11.0	69	NW			3		5		NW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.63	752.7	29.95	760.6	46 8	8.2	75	NW			2		8		NW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N.School	29.05	737.9	29.99	761.8	41.7	5.4	69	SW			4		8		SW	0.12	3.	Very cloudy	Baudry, Director.
Lorient, Naval Observatory	29.88	759.0	29.98	761.5	51.8	11.0	71	NW			2			N	NW	0	0		Lt T. Carré, Director.
Mâcon, Normal School	30.04	762.9	30.07	763.7	44.8	7.1	75	N			3		10			0	0	Covered	M. Galzin, Director.
Mirecourt, Normal School	28.77	730.8	29.84	757.9	36.9	2.7	89	SSW			2		10k		NE			Snowy	M. Barbier, Director.
Nismes Normal School	29.82	757.3	30.02	762.5	57.2	14	63	SE			1		5		NW	0	0	Cloudy	Boyer, Director.
Privas, Normal School	28.81	731.7	29.88	759.0	50.0	10	64	N			3		10	N	N	0	0	Lightly cov	M. Cantier.
Puy de Dome (Summit)	24.98	634.6			26.8	— 2.9	100	W			4		Fog			0.913	23.2	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	29.98	761.6	30.02	762.4	51.1	10.6	80	WNW			1		0			0.08	2.	Clear	Lt. Decante, Director.
Rouen, Normal School	29.81	757.1	29.89	759.3	48.9	9.4	66	NNW			1		2		NW	0.728	18.5	Slightlycl'dy	Frere Lucard, Director.
Saint Malo (Port)			29.94	760.4	49.8	9.9	75	SW			1		5		W	0.268	6.80	Cloudy	M. H. Hercouet.
Saint Maur, (near Paris)	29.74	755.5	29.91	759.7	47.8	8.8	65	NW			1		1		NW	0 076	1.9		E. Renou.
Tarbes, Normal School	28.95	735.3	30.02	762.4	57.2	14	78	S			4		10			0.47	12.	Raining	T. Huguet, Director.
Villefranche-sur-Saone, N.S.	29.34	745.3	30.07	763.8	47.6	8.8	95	SW			1		5		W	0	0	Cloudy	M. Gausserand, Director
SUB-SERIES.																			
Fort de France, Martinique	29.81	757.2	29.84	757.9	78.8	26										1.10	28.		L'Abbé Marchès.
Lyons, Observatory			29.80	757.0	46.8	8.2	63						5			0 055	1.4		
Marseilles, Observatory			30.01	762.3	53.4	11.9	41	NW			2		5			0	0		The Staff.
Mont-Louis	24.77	629.2	30.09	764.2	41.5	5.3	46	WSW			2		4			0	0		M. Cave.
Nice			29.91	759.7	56.8	13.8	52	W			4		0			0	0		Dr. A. Niepce.
Paris, Montsouris Obs'y	29.61	752.2	29.89	759.2	46.9	8.3	63	NNW			2		2		NNW	0.138	3.5		Marié Davy, Director
Perpignan			30.03	762.8	52.2	11.2	71	NW	5.6	2 50			10		NW	0	0		Dr. Finot.
Pic du Midi, (Summit,) H. P.																			M. Baylac.
Pic du Midi, (Plantade,) H. P.	22.39	568.7			31.1	— 0.5		WNW			3		9			0.0.9	0.5	Fair?	Gen'l de Nansouty
Toulouse, Observatory	29.34	745.2	30.07	763.6	48.4	9.1	82	NNW			3		10					Raining	B. Baillaud.
Tours	29 70	754.4	29.90	759.4	48.4	9.1	71	NNW			2		5		WNW	0	0		C. Marquet.
Versailles			29.91	759.6	48.6	9.2	88	NW			1		4			0.152	3.89	Fair	Dr. A. Bérigny.
Zi-Ka-Wei, (near Shanghai)	30.22	767.5	30.24	768.2	57.0	13.9	91	E	2.0	0.9		8ck		SW		0	0	Covered	Mare Declevrens, S. J.

NOTE.—Generally, the originals give the wind-force by the scale 0 to 7; no distinction between upper and lower clouds, and, in the official series, the amount by the scale 0 to 4; the rain-fall as measured at 7, 8 or 9 a. m., except St. Maur 10 p. m., local time; at Clermont-Ferrand, 9 a. m. of the following day; the weather in general terms as published; at Commune de Grèasque the directions of upper and lower clouds are apparently transposed. The elevation of Clermont-Ferrand is 388 meters, or 1,272.9 feet, Commune de Grèasque, 322 m., or 1,056.4 ft.; Puy de Dome (Summit,) 1,467 m.; or 4,812.8 ft.; Tarbes, 308 m., or 1,010 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Summit,) 2,877 m., or 9,439.1 ft.; Pic du Midi, (Plantade,) 2,366 m., or 7,762.1 ft. In correcting the Mont-Louis barometric observations for altitude the constant 135 millimeters has been added For Macon: he barometer readings in the first two columns are apparently corrected for temperature and elevation, but not for instrumental error. At Clermont-Ferrand the observations have been taken at 0:50, instead of 0:55, p. m., local time. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the coöperation of Professor Dr. G. Neumayer, Director of the German Naval Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-12	Clouds. Amount. Up'er 0-10	Clouds. Amount. Low'r 0-10	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.90	734.0	29.73	755.2	38.1	3.4	82	SE	.....	.....	3	.....	9	S	.....	0.08	2.	Rain & snow	Prof. Dr. Hoh.
Berlin	29.62	752.3	29.79	756.7	43.9	6.6	69	/	.....	.....	3	.....	8	.....	.....	0.028	0.7	.....	Prof. Arndt.
Breslau	29.32	744.6	29.84	758.			76	[illegible]	.....	.....	3	.....	10	.....	.....	0.778	19.76	.....	Royal University Obs'y
Carlsruhe	29.39	746.6	29.83	757.6	39.6	4.2	87	/	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	Albert Sens.
Cassel	29.16	740.6	29.76	756.0	40.6	4.8	74	S	.....	.....	2	.....	9	SW	.....	0.044	1.13	Snowing	Dr. H. Möhl.
Crefeld	29.63	752.5	29.79	756.6	41.5	5.3	77	NW	.....	.....	3	.....	9	.....	.....	0.04	1.	.....	Director Lose.
Emden	29.87	758.6	29.90	759.5	42.4	5.8	79	W	.....	.....	2	.....	10	.....	.....	0	0	.....	Prof. Prestel.
Frankfort on the Main	29.43	747.4	29.80	756.9	39.4	4.1	.....	SSE	.....	.....	1	.....	10	.....	.....	0.291	7.4	.....	Physical Society.
Friedrichshafen	28.44	722.3	29.91	759.7	39.2	4.0	68	WSW	.....	.....	9	.....	10	W	.....	0.276	7.0	.....	M. Wilhelm.
Hamburg	29.72	754.8	29.79	756.6	40.6	4.8	84	WSW	.....	.....	1	.....	0	.....	.....	0.008	0.2	Clear	Captain F. Hegemann.
Kiel	29.66	753.3	29.67	753.7	42.6	5.9	83	WSW	.....	.....	2	.....	2	.....	.....	0	0	.....	Prof. G. Karsten.
Königsberg, (Prussia)	29.49	749.1	29.58	751.2	41.9	5.5	77	SW	.....	.....	8	.....	6	.....	.....	0.528	13.4	.....	Prof. E Luther.
Köslin	.....	.....	29.59	751.6	46.2	5.1	.....	S	.....	.....	2	.....	5	.....	.....	0.488	12.4	.....	H. Müller.
Leipsic, Observatory	29.40	746.8	29.83	757.6	44.2	6.8	68	SW	.....	.....	3	.....	8	SW	.....	0.008	0.2	.....	Prof. Bruhns, Sec. Counsel.
Memel, Naval School	29.44	747.8	29.49	749.0	43.7	6.5	93	S	.....	.....	7	.....	9ks;s	.....	.....	.....	.....	Squally	Reinbrecht and Skalweit.
Neufahrwasser	29.64	750.2	29.55	750.6	44.4	6.9	91	SSW	.....	.....	3	.....	10	.....	.....	1.634	41.5	Raining	A. Lothes.
Posen	29.49	749.0	29.78	756.5	42.4	5.8	79	W	.....	.....	5	.....	10	.....	.....	0.283	7.2	.....	Dr. Magener.
Strassburg (in Alsace)	29.32	744.6	29.88	758.9	40.3	4.6	82	SW	.....	.....	3	.....	10	SW	.....	0.381	9.67	Raining	Imp. Astronomical Observatory
Stuttgart	28.84	732.4	29.80	756.8	40.5	4.7	68	SW	.....	.....	2	.....	10	.....	.....	0.008	0.2	Light rain	Prof. Schoder.
Treves, (Trier)	29.26	743.3	29.78	756.4	41.0	5.0	81	SW	.....	.....	4	.....	10	.....	.....	0.063	1.60	Foggy	Prof. Flesch.
Weissenburg, (Bavaria)	28.31	719.0	29.80	757.0	34.7	1.5	92	SSW	7.6	3.4	.....	.....	10	.....	W	0.071	1.8	Squally	Dr. Von Bebber.
Wustrow, Naval School	29.71	754.6	29.73	755.2	44.8	7.1	70	NW	.....	.....	2	.....	8s	.....	.....	0	0	.....	E. Schütz, Dir.
German Naval Series.																			
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Note—The elevation of Friedrichshafen is 413.3 meters, or 1,356.9 feet; Weissenburg, 431 m., or 1,414.0 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4; Crefeld, by the scale 0 to 12. It is not always certain that the rain-fall has been measured at, and the remarks in the weather column refer to the moment of observation. At Königsberg the observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the cooperation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.57	751.1	29.95	760.8	71.6	22.1	.....	SW	.....	.....	1.0	.....	.....	.....	.....	.....	.....	Sprinkling	Dr. J. F. J. Schmidt.
.....																			
.....																			
.....																			

Note—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds; they omit the humidity, amount of cloudiness and rain-fall.

INDIAN SERIES

Furnished by the coöperation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deesa	29.40	746.6	29.87	758.7	83.6	28.8	23	NE	.....	.....	.....	.....	0	.....	.....	0	0	Blue sky	.....
Bombay	29.71	754.6	29.75	755.6	84.7	29.3	69	NW	11	4.9	.....	.....	10	W	SW	0	0	Overcast	.....
Poona	27.81	706.4	29.81	757.1	79.0	26.1	71	E	.....	.....	.....	.....	10	.....	E	0	0	Overcast	.....
Lahore	29.15	740.3	29.90	759.5	74.6	23.7	40	Calm	0.7	0.3	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Belgaum	27.24	691.8	29.79	756.6	71.7	22.1	93	Calm	0	0	.....	.....	10	.....	NNE	1.00	25.4	Raining	.....
Roorkee	28.97	735.8	29.68	753.8	74.8	23.8	52	Calm	1	0.4	.....	.....	.....	.....	.....	0	0	.....	.....
Agra	29.30	744.2	29.86	758.3	86.7	30.4	30	W	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....
Nagpur	28.74	730.1	29.78	756.4	82.6	28.1	59	NE	6.1	2.7	.....	.....	9	.....	SSE	0	0	Gloomy	.....
Lucknow	29.47	748.6	29.84	758 0	83.3	28.5	44	Calm	0.9	0.4	.....	.....	.....	.....	.....	0	0	Blue sky	.....
Allahabad	29.52	749.7	29.83	757.6	80.2	26.8	68	Calm	1.9	0.8	.....	.....	0	.....	.....	0	0	Blue sky	.....
Patna	29.66	753.4	29.84	758.0	82.1	27.8	78	Calm	0.5	0.2	.....	.....	4	.....	.....	0	0	D. clouds	.....
Hazaribagh	27.84	707.0	29.87	758.6	73.6	23.1	81	E	5.9	2.6	.....	.....	10	.....	.....	.....	.....	Drizzling	.....
Cuttack	29.73	755.1	29.81	757.2	78.6	25.8	84	NE	5.4	2.4	.....	.....	8	.....	.....	0.03	0.8	Drizzling	.....
Calcutta (Alipore)	29.83	757.8	29.86	758.3	77.5	25.3	91	ENE	3.0	1.3	.....	.....	10	.....	.....	0	0	Overcast	.....
Goalpara	29.47	748.6	29.86	758.6	77.9	25.5	80	Calm	4.7	2.1	.....	.....	2	.....	.....	0	0	D. clouds	.....
Chittagong	29.78	756.3	29.87	758.7	79.1	26.2	70	Calm	3.3	1.5	.....	.....	10	.....	.....	0	0	Overcast	.....
Sibsagar	29.58	751.4	29.92	760.0	70.6	21.4	90	SSE	1.2	0.5	.....	.....	10	W	W	0.03	0.8	D. clouds	.....
Jubbulpore	28.47	723.0	29.83	757.6	82.4	28.0	57	E	1.6	0.7	.....	.....	4	.....	.....	0	0	D. clouds	.....
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Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. In the originals the data are given to an additional decimal, and all conversions are published as given; the weather by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,992.4 feet, or 606.8 meters; Nagpur, 1,026 ft., or 312.4 m.; Hazaribagh, 2,010 ft., or 612.6 m.; Jubbulpore, 1,351 ft., or 411.8 m. The velocity given is the average rate of wind since last observation.

ITALIAN SERIES.

Furnished by the coöperation of His Excellency the Minister of Public Instruction, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.58	751.3	29.98	761.6	50.2	10.1	53	W	1.3	0.6	.....	.....	5	.....	.....	0.322	8.2	.....	Prof. Giovanni Clodig.
Padua	29.84	757.9	29.95	760.7	51.6	10.9	60	ESE	8.7	3.9	.....	.....	2	E	.....	0.043	1.1	.....	Prof. Dott. Lorenzoni
Vicenza	29.76	755.9	29.95	760.8	50.2	10.1	58	ENE	0.7	0.3	.....	.....	2	W	.....	0	0	.....	Cont. Alm. Da Schio.
Bergamo	28.61	726.7	29.93	760.3	48.2	9.0	58	W	.....	.....	2	.....	3	.....	.....	0	0	.....	Prof. Trionfini Carlo.
Milan	29.37	746.0	29.89	759.2	50.0	10.0	58	ESE	.....	.....	2	.....	4	WNW	.....	0	0	.....	Prof. Schiaparelli.
Moncalieri	28.98	736.0	29.88	759.0	48.6	9.2	37	NNW	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Prof. P. F. Denza.
Mondovi	27.95	710.0	29.85	758.3	45.3	7.4	22	N	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. D. C. Bruno.
Porto Maurizio	29.66	753.3	29.88	758.9	56.8	13.8	37	WSW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. L. Vassallo.
Genoa	29.72	755.0	29.89	759.3	58.6	14.8	39	SW	7.4	3.3	.....	.....	2	SE	.....	0	0	.....	Prof. G. M. Garibaldi.
Parma	29.66	753.3	29.98	761.4	50.9	10.5	47	SW	.....	.....	0	.....	6	.....	.....	0.161	4.1	.....	Prof. P. Pigorini.
Florence	29.70	754.4	29.96	760.9	50.0	10.0	61	S	.....	.....	2	.....	10	.....	.....	0	0	.....	Cav. F. Meucci
Leghorn	29.82	757.3	29.90	759.4	57.9	14.4	51	W	3.1	1.4	.....	.....	5	W	.....	0	0	.....	Prof. P. Monte.
Pesaro	29.91	759.6	29.95	760.8	53.6	12.0	41	N	7.4	3.3	.....	.....	2	.....	.....	0.039	1.0	.....	Prof. Luigi Guidi.
Urbino	28.41	721.5	29.94	760.5	50.2	10.1	39	SW	.....	.....	2	.....	5	.....	.....	0.354	9.0	.....	Prof. P. Serpieri
Rome	29.82	757.5	30.00	761.9	62.6	17.0	40	W	5.6	2.5	.....	.....	7	.....	.....	0.047	1.2	.....	Prof. P. G. S. Ferrari.
Naples, O. U	29.78	756.5	29.98	761.5	65.5	18.6	40	W	.....	.....	4	.....	6	W	.....	0.346	8.8	.....	Prof. L. Palmieri.
Lecce	29.72	754.8	29.97	761.1	68.9	20.5	52	WNW	8.1	3.6	.....	.....	4	WNW	.....	0	0	.....	Prof. C. De Giorgi.
Cagliari	29.81	757.1	30.00	761.9	66.2	19.0	56	SE	.....	.....	2	.....	7	W	.....	0	0	.....	Prof. A. Pacinotti.
Cosenza	29.14	740.1	30.00	762.0	65.7	18.7	70	SW	.....	.....	2	.....	9	.....	.....	0.260	6.6	.....	Prof. F. D. Conti.
Palermo	29.81	757.1	30.06	763.4	67.1	19.5	67	NW	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	Prof. G. Cacciatore.
Syracuse	30.02	762.6	30.10	764.5	67.3	19.6	58	S	2.5	1.1	.....	.....	5	W	.....	0.020	0.5	.....	Prof. V. Giuliano.
SUB-SERIES.																			
Naples, S. R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. Brioschi.
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NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds. The elevation of Bergamo is 379.6 m., or 1,245.3 ft.; Mondovi, 556 m., or 1,824.2 ft.; Urbino, 451 m., or 1,479.7 ft.

JAPANESE SERIES.

Furnished by the coöperation of the Imperial Meteorological Observatory, and the Imperial University of Tokei, Japan.

Nagasaki	29.99	761.7	30.19	766.8	50.5	10.3	85	Calm	0	0	.....	.....	0	.....	.....	0	0	Clear	.....
Tokei (Yeddo) Observatory	30.11	764.8	30.18	766.6	54.8	12.7	97	NNW	6.3	2.8	.....	.....	10n	.....	.....	0.060	1.52	Light rain	I. Arai, Director.
Tokei (Yeddo) University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. T. C. Mendenhall.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The data are published as given. The rain-fall at the Observatory is measured at 9:30 a. m., local time.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the coöperation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the city of Mexico, and the respective Observers.

Cuernavaca	.....	.....	.....	.....	62.6	17.0	64	W	.....	.....	4	2ck	0	N	.....	0	0	Clear	P. Ceballos.
Guadalajara	25.18	639.6	30.24	768.2	51.8	11.0	58	SE	.....	.....	2	0	1	.....	.....	0	0	Clear	Prof. L. Perez.
Leon	24.55	623.6	30.13	765.5	59.9	15.5	81	SE	.....	.....	1	0	0	.....	.....	0	0	Blue sky	Prof. M. Leal.
Mexico	23.23	590.1	30.30	769.5	52.7	11.5	85	N	1.1	0.5	.....	0	10k	.....	N	0	0	Overcast	Central Observatory.
Pabello ', (Aguascalts)	.....	.....	.....	.....	57.0	13.9	78	W	.....	.....	2	0	1s	.....	E	0	0	Clear	M. V. de Leon, M. E.
Tlacotalpam	30.08	764.4	30.09	764.7	73.9	23.3	91	W	.....	.....	1	1	4	SW	N	0.130	3.3	Raining	M. M. Cházaro.
San Luis Potosi	24.05	618.0	30.32	770.1	55.0	12.8	12	E	.....	.....	.....	.....	10	.....	E	0	0	Covered	G. Barroeta, M. D.
Vera-Cruz	30.15	765.8	30.18	766.5	79.7	26.5	76	NNW	8.5	3.8	.....	2c	4sk	SE	N	Inap.	Inap.	Cloudy	Prof. J. Rossell.
Zacatecas	22.67	575.7	30.30	769.6	52	11	89	NNE	.....	.....	4	0	0	.....	.....	0	0	Blue sky	J. A. Bonilla, M. E.
Puebla, (Catholic Institute)	23.36	593.5	30.13	765.2	48.2	9.0	88	N	5.4	2.4	.....	0	1	.....	Calm	0	0	Clear	Prof. P. Spina.
Durango	24.28	616.8	30.17	766.4	55.0	12.8	75	NNW	.....	.....	1	0	0	.....	.....	0	0	Clear	M. V. de Leon, C. E.
Colima	28.38	720.9	30.01	762.2	78.4	25.8	73	NE	.....	.....	1	0	1	.....	Calm	0	0	Clear	R. Banda, C. E.
San Juan E. Michapam	29.89	759.2	30.04	762.9	73.4	23	..	Calm	.....	.....	0	2cs	1s	.....	N	0	0	Clear	Antonio Guerra y Guerra.
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NOTE.—The elevation of Cuernavaca, 1,556.5 m., or 5,106.5 ft.; Guadalajara, 1,569.3 m., or 5,148.5 ft.; Leon, 1,774 m., or 5,820 ft.; Mexico, 2,265.8 m., or 7,433.5 ft.; Pabellon, 1,924.4 m.; or 6,313.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.5 ft.; Zacatecas, 2,496 m., or 8,188.6 ft.; Puebla, Catholic Institute, 2,170 m., or 7,119.2 ft.; Durango, 1,870 m., or 6,135 ft.; Colima, 507.3 m., or 1,664.3 ft. The instrumental errors of the barometers are not known. The data are published as given. In the originals the barometer at San Juan E. Michapam is reduced to freezing but not to sea-level.

NETHERLANDS' SERIES.

Furnished by the coöperation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.85	758.3	29.85	758.3	46.0	7.8	.....	SW	.....	.....	2	.....	.....	.....	.....	0.118	3.0	.....	
Groningen	29.74	755.5	29.80	756.9	41.9	5.5	.....	SW	.....	.....	2	.....	.....	.....	.....	0	0	.....	
Helder	29.80	756.8	29.80	756.8	43.2	6.2	.....	N	.....	.....	4	.....	.....	.....	.....	0.075	1.9	.....	
Hellevoetsluis	29.80	756.9	29.80	756.9	46.8	8.2	76	W	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	
Utrecht	29.78	756.3	29.82	757.5	45.5	7.5	74	WSW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	H. v d Broek.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the wind-pressure, except at Hellevoetsluis, in kilograms per square meter, at Hellevoetsluis force by scale 0 to 12; they do not give the humidity; for Utrecht, they give the weather as published, from which the amount of cloudiness is taken by the scale 0 to 4, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the coöperation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instru'tal error and temperature. Inches.	Barometer: Corrected for instru'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Bergen	29.69	754.2	29.75	755.6	43.5	6.4	65	S	2.2	1.0	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.83	757.6	29.87	758.6	41.4	5.2	66	NE	4	2	.....	.....	5	.....	.....	0	0	.....	
Christiania	29.64	752.8	29.79	756.6	43.7	6.5	81	NNE	7	3	.....	.....	3	.....	.....	0.315	8.0	.....	
Tromsö	29.90	759 4	29.94	760.5	32.0	0.0	90	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., local time, instead of 1h., 4 min.

PORTUGUESE SERIES.

Furnished by the coöperation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Don Luiz at Lisbon.

Angra, (Azores)	29.67	753.6	29.86	758.4	64.8	18.2	86	W	5.6	2.5	.....	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.04	737.5	30.07	763.6	60.6	15.9	52	E	4.0	1.8	.....	.....	7	ESE	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal, (Madeira)	29.93	760.1	30.01	762.3	71.4	21.9	67	SE	5.6	2.5	.....	.....	6	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon, Observatory	29.68	753.8	30.04	763.0	58.6	14.8	64	NNE	1.3	0.6	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada, (Azores)	29.84	758.0	29.87	758.8	71.2	21.8	72	W	3.1	1.4	.....	.....	5	.....	.....	0.039	1.0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation; occasionally, the weather by the Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 6 h. 8 m., p. m.

Naval Series. Vessels.	Barometer: Corrected for instru'tal error and temperature. Inches.	Barometer: Corrected for instru'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. A. T. Pinha, Com'd.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd.
India	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. Pedroso, Com'd.
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, St. Thomas, Gulf of Guinea	.....	.....	29.98	761.5	84.2	29.0	.....	Calm	.....	.....	0	.....	0	.....	.....	1	.....	Blue sky	A. J. de Mattos, Com'd't.
Rio Douro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Texeira da Silva, Com'd't.
Sado, N. 11° 55′, W. 16° 50′	.....	.....	29.90	759.5	82.2	27.9	.....	NNE	.....	.....	2	.....	1	.....	.....	2	NE	D. clouds	L. Ribeiro de Costa, Com'd't.
Tejo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. T. Guimaraes, Com'd't.
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NOTE.—The Sá da Bandeira gives the barometer reduced to freezing but not to sea-level; the distinction between upper and lower clouds is made as to direction, but not as to amount; the weather by the Beaufort notation; they do not give the humidity.

RUSSIAN SERIES.

Furnished by the coöperation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Warsaw	29.35	745.4	29.78	756.4	40.6	4.8	78	WSW	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.35	745.4	29.77	756.2	45.0	7.2	74	S	7	3	.....	.....	2	.....	.....	.....	.....	.....	Astronomical Obs.
Dorpat	29.43	747.5	29.67	753.7	48.7	9.3	72	S	11	5	.....	.....	10ks,n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
St. Petersburg	29.71	754.7	29.73	755.1	51.6	10.9	77	SSW	9	4	.....	.....	2k	.....	.....	.....	.....	.....	Central Physical Obs.
Kieff	29.21	742.0	29.84	758.0	53.8	12.1	100	SE	16	7	.....	.....	10nks	.....	.....	.....	.....	.....	Physical Cabinet.
Nikolaiev	29.87	758.6	29.94	760.4	66.2	19.0	67	S	4	2	.....	.....	3k	.....	.....	.....	.....	.....	Kurdakof.
Kertch	30.02	762.4	30.04	762.9	65.3	18.5	86	ESE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Moscow	29.62	752.4	30.17	766.4	54.0	12.2	67	SSW	13	6	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Lugan	29.94	760.4	30.14	765.6	51.8	11.0	64	E	22	10	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Archangel	30.00	761.9	30.02	762.4	26.2	— 3.2	96	ENE	13	6	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Tiflis	28.76	730.5	30.17	766.2	63.1	17.3	61	Calm	0	0	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory
Astrakhan	30.37	771.3	30.28	769.2	52.0	11.1	67	ESE	11	5	.....	.....	8ks	.....	.....	.....	.....	Light rain	Capt. Wisganow.
Krotkowo*	29.94	760.5	30.42	772.7	48.6	9.2	47	SSE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Cand. Platjanow.
Kasan	30.17	766.3	30.45	773.3	48.2	9.0	73	SSE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Ekaterinburg	29.44	747.7	30.43	772.9	43.0	6.1	75	W	9	4	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Nukuss	30.12	765.0	30.35	771.0	52.9	11.6	34	NNE	7	3	.....	.....	1k	.....	.....	.....	.....	.....	
Tashkend	29.76	730.5	30.52	775.1	47.5	8.6	49	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Barnaul	29.24	742.6	29.78	756.3	35.1	1.7	93	SW	13	6	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Yeniseisk	29.66	753.4	29.98	761.6	4.8	—18.1	75	NE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Marks.
Peking, (China)	29.84	757.9	29.98	761.5	46.0	7.8	90	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nikolaievsk, on the Amoor	29.85	758.1	29.93	760.3	30.2	— 1.0	92	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	
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*NOTE.—The originals give the amount and generally the kind of clouds without distinguishing between upper and lower clouds; occasionally, the weather by the Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,341.8 feet; Tashkend, 455? m., or 1,492.7? ft.; Irkutsk, 461.6 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165.2? ft. * N. 53° 47′, E 48° 34′.

SPANISH SERIES.

Furnished by the coöperation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective Observers.

Barcelona, Met. Obs'y	29.91	759.8	30.02	762.5	57.0	13.9	69	NE	2.0	0.89	.....	.....	1k	.....	.....	.....	.....	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.00	761.9	30.05	763.3	55.6	14.8	88	NW	0.04	0.02	.....	.....	10	.....	.....	0.319	8.1	Covered	Prof. Manuel de Navera
Burgos, Met. Obs'y	27.07	687.6	.....	.....	53.6	12.0	86	N	2.4	1.06	.....	.....	9	.....	.....	0	0	Covered	Domingo Martin y Perez
Madrid, Royal Observatory	27.83	706.5	30.06	763.5	55.2	12.9	71	SE	3.0	1.33	.....	0	10	.....	.....	0	0	Covered	The Staff.
Murcia, Met. Obs'y	29.88	758.9	30.03	762.7	68.9	20.5	54	N	2.2	1.00	.....	5	5	SE	.....	0	0	Covered	Olayo Diaz, Director.
Santiago, Met. Obs'y.	29.08	738.6	29.97	761.1	60.6	15.9	67	SE	2.5	1.11	.....	0	9	.....	.....	0	0	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.95	760.8	30.02	762.4	78.1	25 6	89	Calm	0	0	.....	10pc?	5n	.....	ENE	Inap.	Inap.	Raining	Benito Vines, S. J.
Manilla, Philippine Islands,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.5	30.04	763.0	69.6	20.9	65	WSW	5.7	2.5	.....	0	9	.....	W	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.85	758.2	29.94	760 5	78.8	26.0	94	SW	0	0	.....	8kn?	6kn	E	E	0.413	10.50	Overcast	Leonardo de Toledo, Ch'f Eng'r

NOTE.—The originals give the weather in general terms, as published; wind-velocity, except for Sub-Series, in kilometers per hour; rain-fall for San Juan as measured at 4 p. m., instead of 8:19 a. m., local time, and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer reduced to freezing but not to sea-level; The elvation of Burgos is 860 meters, or 2,821.4 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the coöperation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, at Stockholm, and of Dr. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.5	29.94	760.5	39.9	4.4	.....	W	.....	.....	2	.....	10	.....	.....	0.20	5.	.....	
Umea	29.80	756.8	29.85	758.1	40.6	4.8	90	NE	.....	.....	4	.....	10	.....	.....	0	0	.....	
Hernosand	29.74	755.3	29.79	756.6	40.3	4.6	94	N	.....	.....	6	.....	10	.....	.....	0.197	5.0	Raining	
Stockholm	29.41	747.1	29.59	751.6	43.8	6.3	84	N	.....	.....	4	.....	10	.....	.....	0.008	0.2	.....	
Wisby	29.44	747.8	29.60	749.3	46.0	7.8	81	NE	.....	.....	7	.....	10	.....	.....	0.083	2.1	Raining.....	
Sub-Series.																			
Upsala	29.55	750.5	29.62	752.4	43.0	6.1	85	N	.....	.....	.....	.....	10	.....	NNE	0.057	1.45	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by the Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWISS SERIES.

Furnished by the coöperation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	724.9	30.00	762.1	41.9	5.5	47	SSW	.....	.....	5	.....	8	.....	.....	0.213	5.4	Covered.....	The Observatory.
Zurich	28.24	717.4	29.93	760.3	39.2	4.0	63	W	.....	.....	6	.....	8	.....	.....	0.039	1.0	Rain & snow	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.2 mm.; Thermometer, —4.4 cent.; Relative Humidity, —27 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 feet.

TURKISH SERIES.

Furnished by the coöperation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Professor C. V. A. Van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.94	760.4	72.3	22.4	57	S	0	0	.....	.....	6	.....	SW	0	0	.....	The Observatory.
Valona	.....	.....	30.07	763.6	68.4	20.2	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	Cloudy.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria,) Lee Obs'y	29.85	758.2	29.96	761.0	77.5	25.3	61	NE	.....	.....	1	.....	0	.....	.....	0	0	Blue sky	Prof. C. V. A. Van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Valona the wind-force by the scale 0 to 7; at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds, and at Valona the amount by the scale 0 to 4. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the cooperation of Professor G. T. Kingston, Director of the Magnetic Observatory at Toronto, and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective Observers. Those marked with a star (*) are also telegraphed daily to the Office of the Chief Signal Officer, U. S. Army.

Bathurst, N. B	29.52	749.8	29.59	751.6	48	8.9	100	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy.....	Hon. J. Ferguson.
Brockville, Ontario	29.29	744.0	29.60	751.8	43	6.1	.....	S	0	3.1	.....	.....	8s	.....	W	0.38	9.7	Cloudy.....	W. R. Bigg.
*Chatham, N. B	29.54	750.8	29.60	751.8	48	8.9	98	NE	1	0.4	.....	.....	Fog	.....	Calm	0.95	24.1	Light rain ..	G. A. Blair.
Charlottetown, P. E. Island	29.68	751.3	29.62	752.3	56	13.5	91	SE	15	6.7	.....	.....	10n	.....	Calm	0.110	27.9	Cloudy.....	H. J. Cundall, C. E.
Cornwall, Ontario	29.38	746.2	29.57	751.1	42.5	5.8	94	SW	.....	.....	1	.....	10n	.....	.....	0.520	13.21	Cloudy.....	James Smith, M. A.
Dalhousie, N. B	29.37	746.0	29.53	750.0	45.3	7.4	98	E	.....	.....	1	.....	.....	.....	.....	0.12	3.0	Drizzling.....	H. A. Johnson
Esquimault, B. C	29.99	761.7	30.03	762.7	38.1	3.4	100	Calm	.....	.....	.....	0	0	.....	.....	0	0	Clear.....	W. H. Bevis.
*Father Point, Quebec	29.59	751.6	29.62	752.3	39	3.9	95	Calm	0	0	.....	.....	Fog	.....	Calm	0.17	4.3	Foggy.....	J. McWilliams.
Fredericton, N. B	29.55	750.6	29.62	752.3	45.1	7.3	94	NW	1	0.4	.....	.....	Fog	.....	.....	0.100	2.54	Foggy.....	Prof. Harrison.
*Fort Garry Manitoba	29.20	741.7	30.08	764.0	22	— 5.6	86	S	17	7.6	.....	5k	5n	S	S	0	0	Threatening	James Stewart.
Granton, Ontario	28.62	726.9	29.75	755.6	31	— 0.6	.....	NW	.....	.....	2	.....	10n	.....	.....	0.21	5.1	Cloudy.....	James Grant.
*Halifax, N. S	29.51	749.5	29.64	752.8	57	13.9	98	S	7	3.1	.....	.....	10n	.....	.....	0.689	17.51	Cloudy.....	F. Allison, M. A.
Hamilton, Ontario	29.84	745 2	29.72	754.9	39.3	4.1	80	SW	.....	.....	4	8ck	0	W	.....	0.52	13.2	Cloudy.....	Geo. Dickson, M. A.
Heart's Content, N. F	30.36	771.1	30.39	771.9	39	3.9	91	SW	.....	.....	1	.....	10	.....	.....	0	0	Overcast...	E. Weedon.
*Kingston, Ontario	29.27	743.4	29.66	751.8	41	5.0	91	W	12	5.4	.....	2ck	2ks	W	W	0.39	9.9	Clearing.....	S. Woods, M. A.
Little Glace Bay, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.27	6.9	.....	C. H. Rigby.
*Montreal, Quebec	29.40	746.7	29.61	752.1	41	5.0	90	E	7	3.1	.....	.....	10n	.....	.....	0.69	15.0	Light rain...	C. H. McLeod, C. E.
*Parry Sound, Ontario	28.91	734.3	29.62	752.3	29	— 1.7	95	N	18	5.8	.....	.....	10n	.....	N	0.46	11.4	Light rain...	Rev. R. Mosley.
Peterboro, Ontario	28.81	731.8	29.57	751.1	39.7	4.3	91	W	.....	.....	0	.....	10n	.....	.....	0.60	15.2	Overcast.....	J. F. Jeffers, B. A.
Port Dover, Ontario	29.02	737.1	29.73	755.1	37	2.8	90	W	16	7.2	.....	5k	5n	W	W	0.42	10.7	Cloudy.....	H. Morgan.
Port Hastings, N. S	29.69	754.1	29.74	755.4	54.5	12.5	.....	SE	20	8.9	.....	.....	.....	.....	.....	0.94	23.9	Raining	Peter Grant.
Port Stanley, Ontario	29.12	739.6	29.79	756.7	33	0.6	88	W	20	8.9	.....	.....	10n	.....	W	0.31	7.9	Light rain...	M. Payne.
*Quebec, Quebec	29.34	745.2	29.67	753.6	37	2.8	100	Calm	.....	.....	0	.....	10n	.....	.....	1.59	40.4	Dense fog...	Capt. Ashe, R. N.
*Rockliffe, Ontario	29.11	739.4	29.68	751.3	37	2.8	71	SE	2	0.9	.....	.....	10s	.....	SE	0.23	5.8	Light snow..	W. H. McIntyre.
St. Andrews, N. B	29.64	750.3	29.59	751.6	49	9.4	99	Calm	0	0	.....	.....	Fog	.....	.....	0.22	5.6	Foggy	Dr. Gove.
St. John, N. B	29.44	747.8	29.61	752.1	52	11.1	100	S	8	3.6	.....	.....	Fog	.....	.....	0.24	6.1	Foggy	G. Murdock, C. E.
*Saugeen, Ontario	29.01	736.8	29.74	755.4	31	— 0.6	81	NW	41	18.3	.....	.....	10ks	.....	N	0.42	10.7	Light snow..	K. Stewart.
Stayner, Ontario	28.85	732 5	29.65	753.1	33	0.6	95	NW	21	9.4	.....	.....	10n	.....	NW	0.29	7.4	Light snow..	R. J. Cole.
Stratford, Ontario	28.41	721.6	29.73	755.1	31.3	—0.4	96	NW	22.0	9.8	.....	1c	8s	NW	.....	0.140	3.56	Cloudy.....	C. J. MacGregor, M.
*Sydney, C. B	29.84	757.9	29.88	758.9	51	10.6	96	SE	28	12.5	.....	.....	10n	.....	.....	0.26	6.3	Light rain...	T. C. Hill.
*Toronto, Ontario	29.23	742.4	29.61	752.1	40	4.4	84	W	15	6.7	.....	.....	8ks	.....	W	0.44	11.2	Cloudy.....	Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram.
Sub-Series.																			
St. Johns, Newfoundland	.....	.....	.....	.....	39	3.9	88	E	.....	.....	.....	4k	4s	.....	.....	0	0	Fair.....	John Delany.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals for Brockville, Charlottetown, Port Dover, Port Stanley, St. Andrews, Stayner and those telegraphed, give the amount of cloudiness by the scale 0 to 4; at St. Andrews, the velocity of the wind is estimated. The elevation of Granton is 1,015 feet, or 309.4 meters; Stratford, 1,182 ft., or 360.3 m.

By authority of the SECRETARY OF WAR. UNITED STATES SERIES.

Furnished by the coöperation of Bvt. Brig. Gen. Albert J. Myer, Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.44	747.8	29.66	753.4	44	6.7	92	W	2	0.9	.....	.....	10s	.....	W	0.15	3.8	Cloudy	
Alpena, Michigan	29.24	742.7	29.92	760.0	26	— 3.9	87	NW	17	7.6	.....	.....	10s	.....	NW	0.57	14.5	Cloudy	
Atlanta, Georgia	28.97	735.8	30.16	766.1	39	3.9	55	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear	
Atlantic City, New Jersey	29.73	755.1	29.74	755.4	50	10.0	100	NW	1	0.4	.....	.....	10n	.....	Calm	0.13	3.3	Light rain	
Augusta, Georgia	29.89	759.2	30.07	763.8	51	10.6	79	W	8	3.6	.....	0	Haze	.....	.....	0.01	0.3	Hazy	
Baltimore, Maryland	29.72	754.9	29.77	756.1	51	10.6	65	NW	5	2.2	.....	.....	10ks	.....	W	0.15	3.8	Cloudy	
Barnegat, New Jersey	29.72	754.9	29.74	755.4	48	8.9	93	Calm	0	0	.....	.....	10n	.....	Calm	0.26	6.6	Light rain	
Bismarck, Dakota	28.27	718.0	30.12	765.0	28	— 2.2	88	S	2	0.9	.....	8c	0	NW	.....	Inap.	Inap.	Cloudy	
Boerne, Texas	28.97	735.8	.....	.....	50	10.0	45	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Boise City, Idaho	27.37	695.2	30.33	770.4	36	2.2	70	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Boston, Massachusetts	29.53	750.0	29.69	754.1	45.5	7.5	100	W	2	0.9	.....	.....	10n;fg	.....	SW;Calm	0.80	20.3	Light rain	
Brackettville, Texas	29.27	743.4	30.32	770.1	57	13.9	69	Calm	0	0	.....	5cs	0	Calm	.....	0	0	Fair	
Breckenridge, Minnesota	29.23	742.4	30.32	770.1	16	— 8.9	83	SW	6	2.7	.....	5cs	0	Calm	.....	0	0	Fair	
Brownsville, Texas	30.21	767.3	30.26	769.1	69	20.6	75	E	8	3.6	.....	2c	2s	SE	Calm	0	0	Fair	
Buffalo, New York	28.94	735.1	29.64	752.8	40	4.4	82	W	24	10.7	.....	2k	5s	W	W	1.14	29.0	Cloudy	
Burkes, Arizona	.....	.....	.....	.....	51	10.6	40	Calm	.....	.....	0	5c	0	SE	.....	0	0	Fair	
Burlington, Vermont	29.40	746.7	29.66	753.4	45	7.2	84	S	4	1.8	.....	.....	10s	.....	W	0.35	8.9	Cloudy	
Cairo, Illinois	29.99	761.7	30.41	772.4	34	1.1	43	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Camp Apache, Arizona	24.64	625.8	29.74	755.4	32	0.0	60	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	
Camp Grant, Arizona	25.09	637.3	29.89	759.2	54	12.2	28	W	.....	.....	2	0	0	.....	.....	0	0	Clear	
Camp Verde, Arizona	27.01	686.0	30.49	774.4	36	2.2	45	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Campo, California	27.53	699.2	30.10	764.5	29	— 1.7	59	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Cape Hatteras, N. Carolina	29.79	756.7	29.80	756.9	60	15.6	82	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Cape Henry, Virginia	29.72	754.9	29.74	755.4	57	13.9	87	SW	4	1.8	.....	0	5s	.....	SW	0	0	Fair	
Cape Lookout, N. Carolina	29.82	757.4	29.83	757.7	60	15.6	77	NW	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Cape May, New Jersey	29.72	754.9	29.75	755.4	52	11.1	86	E	3	1.3	.....	5k	5s	NW	NW	0.41	10.4	Fair	
Castroville, Texas	29.62	752.3	30.35	770.9	57	13.9	52	E	8	3.6	.....	2ck	0	SW	.....	0	0	Fair	
Charleston, South Carolina	29.98	761.5	30.05	763.3	55	12.8	74	W	9	4.0	.....	0	0	.....	.....	0.02	0.5	Clear	
Cheyenne, Wyoming	24.23	615.4	30.17	766.3	30	— 1.1	78	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Chicago, Illinois	29.45	748.0	30.18	766.6	28	— 2.2	77	NW	10	4.5	.....	.....	10s	.....	NW	0.19	4.8	Cloudy	
Cincinnati, Ohio	29.44	747.8	30.12	765.0	36	2.2	90	W	8	3.6	.....	.....	10n	.....	W	0.05	1.3	Light snow	
Cleveland, Ohio	29.11	739.4	29.84	757.9	39	3.9	73	NW	18	8.0	.....	.....	10ks	.....	W	0.17	4.3	Threatening	
Coleman City, Texas	28.65	727.7	30.42	772.7	38	3.3	91	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Columbus, Ohio	29.12	739.6	29.99	761.7	32	0.0	89	W	13	5.8	.....	.....	10n	.....	SW	0.04	1.0	Light snow	
Corpus Christi, Texas	28.51	723.9	30.25	768.3	45	7.2	68	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Corsicana, Texas	30.02	762.5	30.52	775.2	43	6.1	67	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Davenport, Iowa	29.71	754.6	30.40	772.1	23	— 5.0	73	NW	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Decatur, Texas	29.37	744.5	30.56	776.2	40	4.4	65	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Denison, Texas	29.68	753.9	30.53	775.4	39	3.9	64	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Denver, Colorado	25.01	635.2	30.23	767.8	29	— 1.7	78	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Des Moines, Iowa	29.51	749.5	30.47	773.9	21	— 6.1	71	N	4	1.8	.....	8cs	0	Calm	.....	0	0	Fair	
Detroit, Michigan	29.21	741.9	29.90	759.4	34	1.1	61	NW	14	6.3	.....	.....	10s	.....	W	0.05	1.3	Cloudy	
Dodge City, Kansas	27.76	705.1	30.18	766.6	35	1.7	70	SW	5	2.2	.....	0	1s	.....	Calm	0	0	Clear	
Dubuque, Iowa	29.60	751.8	30.36	771.1	23	— 5.0	60	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Duluth, Minnesota	29.60	751.8	30.35	770.9	18	—10.6	62	NW	18	8.0	.....	0	2s	.....	NW	0.08	2.0	Fair	
Eagle Pass, Texas	29.61	752.1	30.37	771.4	59	15.0	59	NE	3	1.3	.....	.....	10s	.....	E	0	0	Cloudy	
Eastport, Maine	29.64	750.3	29.61	752.1	50	10.0	100	S	4	1.8	.....	.....	Fog	.....	Calm	0.75	19.1	Foggy	
Edinburg, Texas	.....	.....	.....	.....	62	16.7	83	N	.....	.....	6	5c	5s	E	Calm	0	0	Fair	
El Paso, Texas	.....	.....	.....	.....	55	12.8	48	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Erie, Pennsylvania	29.01	736.8	29.72	754.9	40	4.4	91	NW	14	6.3	.....	.....	10n	.....	NW	0.29	7.4	Light rain	
Escanaba, Michigan	29.46	748.3	30.16	766.1	20	— 6.7	77	NW	16	7.2	.....	5k	0	NW	.....	0.12	3.0	Fair	
Florence, Arizona	28.57	725.7	30.17	766.3	43	6.1	51	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Fort Craig, New Mexico	25.82	655.8	29.89	759.2	34	1.1	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort Davis, Texas	25.60	647.7	30.40	772.7	57	13.9	53	Calm	0	0	.....	.....	10ks	.....	SE	0	0	Cloudy	
Fort Gibson, Indian Ter	29.96	761.0	30.54	775.7	28	— 2.2	88	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Fort Griffin, Texas	29.21	741.9	30.58	776.7	36	2.2	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Fort McKavett, Texas	28.19	716.0	30.17	766.3	48	8.9	78	E	3	1.3	.....	5ck	0	SW	.....	0	0	Fair	
Fort St. Michael, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Fort Sill, Indian Territory	29.25	742.9	30.44	773.2	34	1.1	79	N	4	1.8	.....	2c	0	Calm	.....	0	0	Fair	
Fredericksburg, Texas	28.72	729.5	30.32	770.1	57	13.9	41	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Galveston, Texas	30.38	771.6	30.43	772.9	56	13.3	57	N	20	8.9	.....	Haze	Haze	.....	.....	0	0	Hazy	
Graham, Texas	29.36	745.7	30.49	774.4	35	1.7	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Grand Haven, Michigan	29.41	747.0	30.09	764.3	32	0.0	69	N	24	10.7	.....	.....	10n	.....	N	0.76	19.3	Cloudy	
Indianapolis, Indiana	29.33	745.0	30.15	765.8	31	— 0.6	89	NW	16	7.2	.....	.....	10n	.....	Calm	0.01	0.3	Light snow	
Indianola, Texas	30.39	771.9	30.42	772.7	57	13.9	69	NE	30	13.4	.....	0	0	.....	.....	0	0	Clear	
Jacksboro, Texas	29.31	744.5	30.51	774.9	40	4.4	73	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Jacksonville, Florida	30.08	764.0	30.11	764.8	59	15.0	65	NW	6	2.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Keokuk, Iowa	29.75	755.6	30.42	772.7	24	— 4.4	74	NW	8	3.6	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Key West, Florida	30.01	762.2	30.04	763.0	77	25.0	80	N	17	7.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Kittyhawk North Carolina	29.77	756.1	29.79	756.7	57	13.9	94	NW	13	5.8	.....	.....	10s	.....	NW	0	0	Cloudy	
Knoxville, Tennessee	29.16	740.7	30.21	767.3	33	0.6	61	W	9	4.0	.....	1ck	0	NW	.....	0.01	0.3	Clear	
La Crosse, Wisconsin	29.56	750.8	30.35	770.9	28	— 2.0	72	N	8	3.6	.....	2c	0	N	.....	Inap.	Inap.	Clear	
La Mesilla, New Mexico	26.36	669.5	30.50	774.7	34	1.1	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Laredo, Texas	29.96	761.0	30.31	769.9	60	15.6	77	NE	7	3.1	.....	10ck	0	E	.....	0	0	Cloudy	
Lead City, Dakota	24.93	633.2	30.20	767.1	38	3.3	72	S	10	4.5	.....	0	0	.....	.....	0.04	1.0	Clear	
Leavenworth, Kansas	29.58	751.3	30.50	774.7	26	— 3.3	75	Calm	0	0	.....	5cs	0	N	.....	0	0	Fair	
Los Angeles, California	29.70	754.4	30.04	763.0	49	9.4	44	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Louisville, Kentucky	29.61	752.1	30.20	767.1	34	1.1	61	W	16	7.2	.....	.....	10s	.....	W	Inap.	Inap.	Threatening	
Lynchburg, Virginia	29.17	740.9	29.85	758.2	47	8.3	70	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Madison, Wisconsin	29.24	742.7	30.30	769.6	21	— 6.1	57	NW	20	8.9	.....	0	0	.....	.....	0.26	6.6	Clear	
Marquette, Michigan	29.38	746.2	30.18	765.3	20	— 5.0	100	NW	22	9.8	.....	.....	10n	.....	NW	0.29	7.4	Light snow	
Mason, Texas	28.80	731.5	30.64	778.2	45	7.2	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Milwaukee, Wisconsin	29.41	747.0	30.18	766.6	26	— 3.3	69	NW	20	8.9	.....	0	5s	.....	NW	0.32	8.1	Fair	
Mobile, Alabama	30.29	769.4	30.33	770.4	49.5	9.7	64	N	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.04	763.0	30.29	769.4	45	7.2	76	NW	12	5.4	.....	0	1s	.....	NW	0.01	0.3	Clear	
Morgantown, West Virginia	28.84	732.5	29.91	759.7	38	3.3	72	SW	15	6.7	.....	.....	10n	.....	W	0.04	1.0	Light snow	
Mt. Washington, N. H.	23.42	594.9	29.78	756.4	25	— 3.9	100	NW	21	9.4	.....	.....	Fog	.....	NW	0	0	Foggy	
Nashville, Tennessee	29.76	755.9	30.32	770.1	35	1.7	70	W	6	2.7	.....	0	Sm'e	.....	Calm	0.01	0.3	Clear	
New Haven, Connecticut	29.59	751.6	29.70	754.4	50	10.0	86	W	2	0.9	.....	.....	10n;fg	.....	Calm	0.91	23.1	Light rain	
New London, Connecticut	29.66	753.4	29.71	754.6	49	9.4	93	Calm	0	0	.....	.....	10n	.....	SW	0.20	5.1	Light rain	
New Orleans, Louisiana	30.30	769.6	30.36	771.1	55	12.8	50	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Newport, Rhode Island	29.64	752.8	29.69	754.1	51	10.6	93	Calm	0	0	.....	.....	10s	.....	SW	0.29	7.4	Threatening	
New York, New York	29.56	750.8	29.74	755.4	50	10.0	77	SW	6	2.7	.....	.....	10s	.....	SW	0.28	7.1	Threatening	
Norfolk, Virginia	29.73	755.1	29.79	756.7	56	13.3	87	W	4	1.8	.....	5k	0	W	.....	0.01	0.3	Fair	
North Platte, Nebraska	27.40	696.0	30.15	765.8	26	—3.3	88	NW	6	2.7	.....	2c	0	Calm	.....	0	0	Clear	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	37.4	3.0	100	S	3	1.3	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Omaha, Nebraska	29.24	742.7	30.42	772.7	29	— 1.7	78	W	2	0.9	.....	2c	0	Calm	.....	0	0	Clear	

UNITED STATES SERIES.—Continued.

STATIONS.	Barometer. Correcte for instrum'tal error and temperature. Inches.	Barometer. Correcte for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Oswego, New York	29.35	745.5	29.60	753.4	48	8.9	63	SW	8	3.6	.....	.....	10s	.....	W	0.08	2.0	Cloudy	
Pembina, Dakota	29.24	742.7	30.12	765.0	20	— 6.7	85	S	16	7.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Philadelphia, Pa	29.71	754.6	29.76	755.9	51	10.6	86	W	11	4.9	.....	.....	10s;fg	.....	W; Calm	0.24	6.1	Cloudy	
Phœnix, Arizona	28.94	735.1	.....	.....	50	10.0	32	E	.....	.....	2	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.87	452.8	30.08	764.0	20	— 6.7	27	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.28	616.7	30.04	763.0	39	3.9	38	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.04	737.6	29.86	758.4	37	2.8	81	W	11	4.9	.....	.....	10s	.....	W	0.05	1.3	Threatening	
Port Huron, Michigan	29.19	741.4	29.88	758.9	29	— 1.7	89	NW	23	10.3	.....	.....	10n	.....	Calm	0.06	1.5	Light rain	
Portland, Maine	29.62	752.3	29.97	753.6	43	6.1	83	SW	4	1.8	.....	.....	10s	.....	Calm	0.25	6.3	Cloudy	
Portland, Oregon	30.07	763.8	30.16	766.6	41.0	5.0	95	S	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Prescott, Arizona	24.94	633.5	30.30	769.6	32	0.0	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.64	752.8	30.52	775.2	39	3.9	73	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.07	763.8	30.09	764.3	72	22.2	80	N	16	7.2	.....	8cs	2s	NW	N	0	0	Cloudy	
Red Bluff, California	29.77	756.1	30.13	765.3	48	8.9	63	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	30.17	766.3	30.39	771.9	63	17.2	67	N	.....	.....	2	.....	10s	.....	N	0	0	Cloudy	
Rochester, New York	29.03	737.3	29.64	752.8	40	4.4	82	W	6	2.7	.....	1k	0	Calm	.....	0.12	3.0	Clear	
Roseburg, Oregon	29.60	751.8	30.16	766.6	39.4	4.2	100	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sacramento, California	30.03	762.7	30.12	765.0	44.6	6.9	88	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.80	756.9	30.41	772.4	28	— 2.2	77	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
St. Marks, Florida	30.16	766.1	30.17	766.3	52	11.1	93	NW	6	2.7	.....	0	0	.....	.....	0.07	1.8	Clear	
St. Paul, Minnesota	29.45	748.0	30.35	770.9	17	— 8.3	67	NW	2	0.9	.....	5cs	0	Calm	.....	0	0	Fair	
Salt Lake City, Utah	25.90	657.8	30.24	768.1	40	4.4	56	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.72	754.9	30.38	770.4	54	12.2	61	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	30.00	762.0	30.07	763.8	49	9.4	71	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.22	742.2	29.90	759.4	38	3.3	72	NW	30	13.4	.....	.....	10s	.....	NW	0.03	0.8	Cloudy	
Sandy Hook, New Jersey	29.70	754.4	29.78	755.1	49	9.4	93	W	6	2.7	.....	.....	10n	.....	W	0.26	6.6	Light rain	
San Francisco, California	30.08	764.0	30.14	765.5	52	11.1	86	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.52	597.4	30.06	763.5	34	1.1	52	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.98	761.5	30.08	764.0	56	13.3	81	NW	6	2.7	.....	0	0	.....	.....	0.17	4.3	Clear	
Shreveport, Louisiana	30.26	768.6	30.50	774.7	48	8.1	67	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	24.52	622.8	.....	.....	34	1.1	51	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Smithville, North Carolina	29.89	759.2	29.92	760.0	56	13.3	94	NW	9	4.0	.....	0	0	.....	.....	0.02	0.5	Clear	
Springfield, Massachusetts	29.56	750.8	29.68	753.9	49	9.4	93	SW	4	1.8	.....	.....	Fog	.....	Calm	0.72	18.3	Foggy	
Stockton, Texas	27.34	694.4	30.34	770.6	48	8.9	42	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.64	752.8	29.69	754.1	46	7.8	92	NW	1	0.4	.....	.....	10s	.....	Calm	0.73	18.5	Cloudy	
Toledo, Ohio	29.26	743.2	29.95	760.7	37	2.8	53	W	18	8.0	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
Tucson, Arizona	.....	.....	.....	.....	46	7.8	40	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Tybee Island, Georgia	30.01	762.0	30.07	763.8	65	18.3	74	NW	16	7.2	.....	0	0	.....	.....	0.39	9.9	Clear	
Umatilla, Oregon	29.81	757.2	.....	.....	36.0	2.2	90	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Unalashka, Aleutian Islands	.....	.....	.....	.....	43	6.1	100	SW	.....	.....	1	.....	10s	.....	W	0.17	4.3	Cloudy	
Uvalde, Texas	29.52	749.8	30.35	770.9	55	12.8	62	E	5	2.2	.....	5ck	0	Calm	.....	0	0	Fair	
Vicksburg, Mississippi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	.....	
Virginia City, Montana	24.42	620.3	29.90	759.4	31	— 0.6	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.76	755.9	30.14	765.5	45	7.2	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.70	754.4	29.82	757.4	48	8.9	70	NW	6	2.7	.....	2ck	8ks	SW	SW	0.22	5.6	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	43	6.1	43	N	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, N. Carolina	29.82	757.4	29.90	759.4	55	12.8	87	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.85	656.6	30.21	767.3	33	0.6	61	NE	11	4.9	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Mass	29.65	753.1	29.70	754.4	52	11.1	86	NW	4	1.8	.....	.....	10s;fg	.....	Calm	0.27	6.9	Foggy	
Yankton, Dakota	29.07	738.4	30.48	774.2	20	— 6.7	70	NW	1	0.4	.....	5c	0	NW	.....	0	0	Fair	
Yuma, Arizona	29.87	758.7	30.04	763.0	53	11.7	61	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
St. Paul's Island, Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
York Factory, B. A.	29.45	748.0	29.50	749.3	7.0	—13.9	89	E	9	4.0	.....	2ck	0	W	.....	0	0	Fair	J. Fortescue, W. Wood.
Fayettville, Ark.	28.85	732.8	30.36	771.1	29	— 1.7	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. B. Gordon.
Havana, Cuba, W. I.	29.99	761.7	30.01	762.2	81	27.2	82	Calm	0	0	.....	.....	10n	.....	E	.....	.....	Light rain.	Chas. Hasse brink.
Santiago de Cuba, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	81	27.2	87	E	7	3.1	.....	4c	8ks	NE	.....	0.55	14.0	Cloudy	G. O. Gellich.
Kingston, Jamaica, W. I.	30.08	764.0	30.09	764.3	79	26.1	91	Calm	0	0	.....	8c	2s	Calm	.....	0	0	.....	James Gall.
Navassa, W. I.	29.85	758 2	29.93	760 2	82	27.8	.....	SE	7.1	3.2	.....	.....	.....	.....	.....	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.94	760.5	29.94	760.5	80	26.7	91	NE	.....	.....	2	.....	8ks	.....	.....	0.260	7.11	¾ cloudy	C. J. Herring.
Medellin, Colombia, S. A.	26.20	640.1	.....	.....	67.5	19.7	83	Calm	0	0	.....	.....	10s	.....	.....	0.03	0.8	.....	Thomas Herran.
Portland, Jamaica, W. I.	29.74	755.4	30.05	763.3	75	23.9	85	SE	.....	.....	.....	ck	.....	.....	.....	.....	.....	Clear	Robert Elworthy.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except York Factory, Medellin, Portland, W. I., and Paramaribo. The elevation of the barometer at Atlanta is 1191.3 feet or 344.6 meters; Bismarck 1,706 feet, or 520 m.; Boerne, 1,333 (?) ft., or 406.3 (?) m.; Boise City, 2,869 (?) ft., or 874.4 (?) m.; Brackettville, 1,026 (?) ft., or 312.7 (?) m.; Camp Grant, 4,883 (?) ft., or 1,473.2 (?) m.; Camp Verde, 3,500 (?) ft., or 1,066,8 (?) m.; Campo, 2,486 (?) ft., or 757.8 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526.4 (?) m.; Concho, 1,759 (?) ft., or 533.4 (?) m.; Decatur, 1,160 (?) ft., or 353.6 (?) m.; Denver, 5,162 ft., or 1,573.4 m.; Dodge City, 2,486 ft., or 757.8 m.; Fort Craig, 4,622 (?) ft., or 1,408.8 (?) m.; Fayettville, Ark., 1,422 ft., or 433.4 m.; Fort Davis, 5,208 (?) ft., or 1,585.9 (?) m., Fort Griffin, 1,270 (?) ft., or 387.0 (?) m.; Fort McKavett, 2,050 (?) ft., or 624.9 (?) m.; Fort Sill, 1,100 (?) ft., or 335.3 (?) m.; Florence, 1,550 (?) ft., or 472.5 (?) m.; Fredericksburg, 1,614 (?) ft., or 492.0 (?) m.; Graham, 1,040 (?) ft., or 317.0 (?) m.; Jacksboro, 1,119.2 (?) ft., or 341.1 (?) m.; La Mesilla, (?); Lead City, (?); Mason, 1,800 (?) ft., or 548.7 (?) m.; Morgantown, 1,027.9 ft., or 313.3 m.; Medellin 4,876 ft., or 1,486.2 m.; Mt Washington, 6,285 ft., or 1,916.6 m.; North Platte, 2,846 ft., or 867.4 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 548.7 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.4 (?) m.; Prescott, 5,650 (?) ft., or 1,700.9 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.6 m., Santa Fé, 6,862.2 (?) ft., or 2,091.6 (?) m.; Silver City, 6,696 (?) ft., or 2,102.0 (?) m.; Stockton, 3,100 (?) ft., or 944.9 (?) m.; Tucson, 2,546 (?) ft., or 776.7 (?) m.; Virginia City, 5,480 (?) ft., or 1,670.3 (?) m.; Wickenburg, 2,050 (?) ft., or 624.9 (?) m.; Winnemucca, 4,322 ft., or 1,317.4 m.; Yankton, 1,278 ft., or 389.5 m. The following constants are added in correcting the barometric observations for altitude: Boise City, 2.88 inches; Camp Verde, 3.488 in.; Campo, 2.57 in.; Cheyenne, 5.94 in.; Denver, 5.23 in.; Florence, 1.60 in.; Fort Craig, 4.064 in.; Fort Davis, 4.96 in.; La Mesilla, 4.15 in.; Mt. Washington, 6.36 in.; Pike's Peak, 12.21 in.; Ploche, 5.77 in.; Prescott, 5.36 in.; Salt Lake City, 4.33 in; Santa Fé, 6.54 in.; Stockton, 3.00 in.; Tucson, 2.59 in.; Wickenburg, 2.09 in.; Winnemucca, 4.36 in.; Virginia City, 5.48 in. The instrumental error of the barometer at Medellin is not known. Station Deadwood is distant but two miles from Lead City, which was discontinued October 31st, 1878.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the coöperation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	BAROMETER. As read off. Inches.	BAROMETER. As read off. Millimeters.	BAROMETER. Attached Thermometer. Fahrenheit.	BAROMETER. Attached Thermometer. Centigrade.	TEMPERATURE OF THE AIR. Fahrenheit.	TEMPERATURE OF THE AIR. Centigrade.	RELATIVE HUMIDITY. Per cent.	WIND. Direction. From—	WIND. Velocity. Miles per hour.	WIND. Velocity. Meters per second.	WIND. Force. 0—10.	CLOUDS. Amount. Up'er. 0—10.	CLOUDS. Amount. Low'r. 0—10.	CLOUDS. Direction. Up'er. From—	CLOUDS. Direction. Low'r. From—	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Inches.	RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS. Millimeters.	SEA-SWELL. Character.	SEA-SWELL. Direction from—	WEATHER.	OBSERVER.
Navy Yard, Pensacola, Fla.	30.30	769.6	54	12.2	54	12.2	74	NW	4	1.8	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
NavyYard,Portsmouth,N.H	29.65‡	754.1‡	.....	.....	44	6.7	92	SE	.....	.....	.....	.....	10	.....	.....	0	0	.....	.....	Overcast.....	
Naval Hospital, Yokohama, Japan.....	30.10*	764.5*	60.5	15.8	55	12.8	93	NNW	.....	.....	4	.....	10m	.....	NNE	0.04	1.0	.....	.....	Light rain...	
Adams. Valparaiso, Chili.....	30.11	764.8	62	16.7	61	16.1	82	Calm	.....	.....	0	.....	5	.....	.....	.....	.....	Smooth	.....	Fair.....	
Alaska, Payta, Peru.....	30.12	765.0	69	20.6	67	19.4	74	SE	.....	.....	3	.....	2	.....	SE	0	0	Smooth	.....	Hazy.....	
Alliance, Smyrna, Turkey.....	29.96‡	761.0‡	.....	.....	72	22.2	62	WNW	.....	.....	0-1	.....	7	.....	Calm	.....	.....	.....	.....	Hazy.....	
Ashuelot. Nagasaki, Japan.....	30.21	767.3	59	15.0	57	13.9	87	E	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Clear.....	
Canonicus, New Orleans, La.....	30.25	768.3	44	6.7	56	13.3	51	NW	.....	.....	4	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Colorado. New York, N. Y.....	29.71‡	754.6‡	.....	.....	50	10.0	79	SW	.....	.....	.....	.....	10	.....	SW	0.38	9.7	.....	.....	Drizzling.....	
Constitution, Havre, France.....	.....	.....	.....	.....	50	10.0	86	SW	.....	.....	1	.....	7	.....	WNW	.....	.....	.....	.....	Cloudy.....	
Despatch, Constantinople, Turkey	29.95‡	760.7‡	.....	.....	71	21.7	58	SE	.....	.....	1	.....	5	.....	SW	.....	.....	.....	.....	Fair.....	
Essex, Cape Town.....	30.04	763.0	70	21.1	77	25.0	95	NW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Franklin, Norfolk, Va.....	29.88	758.9	69	20.6	58	14.4	53	NW	4.8	2.1	.....	.....	2	.....	NW	0	0	.....	.....	Clear.....	
Gettysburg Near Jaffa, Syria.....	29.86‡	758.4‡	.....	.....	81	27.2	66	NNW	.....	.....	3-4	.....	7	.....	Calm	0	0	Smooth	.....	D. clouds.....	
Guard. N 21° 27′, W. 56° 14′.....	30.05	763.3	82	27.8	82	27.8	71	NE	.....	.....	5	.....	8	.....	NE	.....	.....	Mod'ate	NE	Clear.....	
Hartford, St. Catherine Strait.....	30.12	765.0	71	21.7	66	18.9	74	N	3.6	1.6	.....	.....	10	.....	N	0.09	2.3	Smooth	.....	Cloudy.....	
Marion, Bastia, Corsica.....	29.90	759.4	60	15.6	60	15.6	100	WSW	.....	.....	5	.....	0	.....	.....	Light	Light	Smooth	.....	Light rain	
Michigan, Erie, Pa.....	29.90†	759.4†	.....	.....	40	4.4	100	W	.....	.....	7	.....	10	.....	W	.....	.....	.....	.....	Rainy	
Monocacy. Yokohama, Japan	30.12‡	765.0‡	.....	.....	57	13.9	81	N	.....	.....	3	.....	10	.....	N	.....	.....	.....	.....	Misty.....	
New Hampshire. Port Royal, S. C.....	30.24	768.1	74	23.3	72	22.2	76	WNW	16	7.2	.....	.....	8†	.....	WNW	0.2	5.	.....	.....	Clear.....	
Onward, Callao, Peru.....	30.10†	764.5†	.....	.....	64	17.8	83	SE	.....	.....	2	.....	8	.....	.....	.....	.....	Long	W	Misty.....	
Palos, Tientsin, China.....	30.04	763.-	74	23.3	48	8.9	85	SSE	.....	.....	5	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
Passaic, Washington, D. C.....	.....	.....	.....	.....	49	9.4	93	NW	.....	.....	1	.....	10	.....	NE	.....	.....	.....	.....	Cloudy	
Plymouth. Santa Cruz, W. I.....	30.10	764.5	84	28.9	84	28.9	79	E	.....	.....	3	.....	5	.....	E	.....	.....	Smooth	.....	Fair	
Powhatan, New York, N. Y.....	29.93‡?	760.2‡?	.....	.....	54	12.2	80	WSW	4.2	1.9	.....	.....	10	.....	.....	0.20	5.1	.....	.....	Overcast.....	
Quinnebaug, Norfolk, Va...	29.80‡	756.9‡	.....	.....	57	13.9	94	WNW	.....	.....	2	.....	8	.....	NW	.....	.....	.....	.....	Fair	
Ranger. Hong-Kong, China.....	30.24	768.1	77	25.0	76	24.4	82	ENE	.....	.....	1	.....	5	.....	Calm	.....	.....	.....	.....	Fair.....	
Rio Bravo, Brownsville, Texas.....	30.20	767.1	68	20.0	68	20.0	90	N	.....	.....	2	.....	2	.....	NW	.....	.....	.....	.....	Fair	
Santee, Annapolis, Md	30.17‡	766.3‡	.....	.....	51	10.6	72	.....	.....	.....	2	.....	10	.....	.....	0.87	23.1	.....	.....	Cloudy	
Saratoga, Philadelphia, Pa.....	29.75	755.6	.....	.....	51	10 6	93	W	.....	.....	1	.....	10	.....	W	Slight	Slight	.....	.....	Misty.....	
St. Louis, League Island, Pa.....	29.71	754.6	62	16.7	50	10.0	93	W	5	2.2	.....	.....	10	.....	W	0.28	7.1	.....	.....	Cloudy.....	
Supply, Havre, France.....	29.93	760.2	55	12.8	51	10.6	65	WNW	.....	.....	0-1	.....	10	.....	.....	.....	.....	.....	.....	Overcast.....	
Trenton, Villafranca, France.....	30.01‡	762.2‡	.....	.....	66	18.9	74	WNW	.....	.....	2	.....	2	.....	W	0	0	.....	.....	Clear.....	
Vandalia, Villafranca, France	29.88‡	758.9‡	.....	.....	61	16.1	52	SSW	.....	.....	1	.....	0	.....	.....	.....	.....	Light	S	Clear	
Wabash, Boston, Mass.....	.....	.....	.....	.....	60	15.6	94	WNW	2	0.9	.....	.....	8	.....	.....	1.	25.	.....	.....	Foggy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4. weather by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and, apparently, the direction is frequently given as toward, instead of from; they do not give the humidity. * It is not known that the barometer is corrected for temperature, instrumental error or elevation. †Aneroid Barometer. ‡Reduced to sea-level; corrections applied at this office. The mercurial barometer of the Plymouth is unreliable, the position given is that at noon, local time, instead of 7:35 A. M., Washington time.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	TRUE COURSE TOWARD—	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE PAST 24 HOURS.	SEA-SWELL.		WEATHER.	OBSERVER.
							Direction.	Velocity.		Force.	Amount.		Direction.						
											Up'er	Low'r	Upper.	Lower.		CHARACTER.	DIRECTION FROM—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From —	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—					
PACIFIC MAIL S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of David S. Babcock, President; Williams, Blanchard & Co., Agents.																			
S. S. China																			Capt. Berry.
S. S. City of New York																			Capt. Cobb.
S. S. City of Panama																			Capt. Seabury.
S. S City of Peking, Hong-Kong China		30.13*	765.3*	72	22.2	90	ENE			2		5		E				D. clouds	Capt. Cavarly.
S. S. City of Sydney																			Capt. Dearborn.
S. S. City of Tokio																			Capt. Maury.
S. S. Colima																			Capt. Searle.
S. S. Costa Rica																			Capt. Whitebury.
S. S. Dakota, N. 46° 24′, W. 124° 50′		30.08*	764.0*	53	11.7	86	SSE			2		10			0	Mod'ate	W	Overcast	Capt. Morse.
S. S. Georgia																			Capt. Connolly.
S. S. Grenada																			Capt. Austin.
S. S. Wilmington																			Capt. A. Fuller.
S. S. Zealandia																			Capt. Ghest.

NOTE.—The originals give the barometer as read off, except S. S. Colima; wind-force by the scale 0 to 12, and weather by the Beaufort notation; no distinction between upper and lower clouds. *Aneroid.

WHITE STAR LINE MARINE SERIES.

Furnished by the coöperation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic, N. 51° 01′, W. 14° 34′		30.28*	769.1*	51	10.6	??	N			3				N	Blank	Heavy	N	D. clouds	Capt. H. H. Perry.
S. S. Baltic																			Capt. J. W. Jenning.
S. S. Britannic																			Capt. W. H. Thompson
S. S. Celtic, N. 48° 10′, W. 38° 53′		29.56*	750.8*	57	13.9	100	NW			4		10		NW	0	Heavy	NE	D. clouds	Capt. B. Gleadell.
S. S. Germanic																			Capt. C. W. Kennedy.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; for the Britannic, amount of cloudiness by the scale 0 to 4. * Corrected for temperature and elevation; instrumental error not known.

OCCIDENTAL AND ORIENTAL S. S. CO. MARINE SERIES.

Furnished by the coöperation of Leland Stanford, President; Chas. F. Crocker, Vice-President; D. D. Stubbs, Secretary.

S. S. Belgic, N. 30° 49′, W. 154° 08′		29.91*	759.7*	69	20.6	85	NW			4		ks		NW		Rough	Cross	Showery	Capt. L. Myer.
S. S. Gaelic																			Capt. W. H. Kidley.
S. S. Oceanic, N. 23° 01′, E. 117° 27′		29.98	761.5	74	23.3	76	NE			4		2		NE		3	ENE	D. clouds	Capt. John Metcalf.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds. The position given for the Oceanic is that at noon, local time, instead of that at 7:35 a. m., Washington time, and the sea-swell by the scale 0 to 9. * Corrected for temperature and elevation; instrumental error not known.

NORTH GERMAN LLOYD OF BREMEN MARINE SERIES.

Furnished by the coöperation of A. Schumacher & Co., Agents.

S. S. Baltimore																			Capt. H. Andressen.
S. S. Berlin																			Capt. T. H. Lamke.
S. S. Braunschweig, N. 52° 55′, E. 3° 57′		29.76	755.9	57.0	13.9	78	NE			2		8		NE	4 hours	1	N	Squally	Capt. Undutsch.
S. S. Leipzig																			Capt. F. Pfeiffer.
S. S. Nürnberg																			Capt. A. Jaeger.
S. S. Ohio																			Capt. G. Meyer.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather as published; do not generally give amount of cloudiness, except S. S. Braunschweig by the scale 0 to 4, nor distinguish between upper and lower clouds. The S. S. Braunschweig gives sea-swell by the scale 0 to 9.

UNITED STATES MARINE SERIES.—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS.	True course toward—	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.	Sea-swell		Weather.	Observer.
							Direction.	Velocity.		Force.	Amount.		Direction.			Character.	Direction from—		
		Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'wr 0—10.	Upper. From—	Lower. From—					
AMERICAN S. S. CO. MARINE SERIES.																			
Furnished by the coöperation of H. D. Welsh, President; Peter Wright & Sons, General Agents.																			
S. S. Indiana, N. 46° 56', W. 34° 43'		29.66*	753.4*	56	13.3	100	N			6		9		N	Light	Heavy	NNW	Cloudy	Captain Sargent.
S. S. Ohio, N. 44° 40', W. 57° 30'		29.99	761.7	51.5	10.8	96	SE			5		10		SE		Mod'ate	SE	Misty	Captain Morrison.
S. S. Pennsylvania																			Captain Harris.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12. The S. S. Pennsylvania give the cloud direction as toward instead of from.
*Aneroid; corrected for elevation; instrumental error not known.

RED STAR LINE MARINE SERIES.

Furnished by the coöperation of James A. Wright, President; Peter Wright & Sons, Agents.

S. S. Nederland																			Capt. Randle.
S. S. Switzerland																			Capt. Jackson.
S. S. Vaderland																			Capt. Nichols.

ALLAN LINE MARINE SERIES.

Furnished by the coöperation of A. Schumacher, & Co.. Agents.

S. S. Austrian																			Capt. W. Richardson.
S. S. Hibernian																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; weather by the Beaufort notation.

MARINE SERIES. (Miscellaneous.)

Furnished by the coöperation of the Observer named.

Schooner Addie Fuller, N. 20° 33', W. 81° 30'		29.90	759.4	84	28.9	79	NE	9	4.0			2k		NE	0	Smooth		Clear	Capt. James Jorgensen.

NOTE.—The originals give the barometer as read off; amount of cloudiness by the scale 0 to 4.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with an especial request,** and are published for the uses of the coöperating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For United States Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. The "weather" is generally published as given; when the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz., fg. and sm'e, are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Candian Series, and the types are indicated by the above letters and their combinations in the proper column.

Albert J. Myer

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer. U. S. A.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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